KDU INTERNATIONAL RESEARCH CONFERENCE – 2014

Expanding Development Horizons through Education, Research and Innovation

PROCEEDINGS

MANAGEMENT, SOCIAL SCIENCES & HUMANITIES

General Sir John Kotelawala Defence University
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Sri Lanka

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FOREWORD

The 7th KDU International Research conference 2014 on the theme Expanding Developmental Horizons through Education, Research and Innovation was organized by General Sir John Kotelawala Defence University on 21 and 22 August 2014. The expansion of KDU in education, research and innovation under the leadership of the Vice Chancellor, Major General Milinda Peiris has brought up the university into a leading university in the country. The university comprises of nine faculties including the faculty of post graduate studies and there is a separate Dean for the enhancement of the research culture in the university. KDU has taken many steps to boost the research culture of the university. The KDU International Research Conference (KDU-IRC) is one of the prominent events organized in every year making a great platform to national and international researchers to publish their research work.

The event included six plenary sessions under disciplinary sub categories, each organized under a sub theme followed by technical sessions in each discipline. The inaugural session was attended by eminent personalities such as Foreign Diplomats, Dr Sarath Amunugama, Senior Minister of International Monetary Cooperation & Deputy Minister of Finance & Planning, Tri-Service Commanders, Additional Secretaries, Chairperson of the University Grants Commission, Vice Chancellors and distinguished academics from other universities, representatives from countries like China, India, and Pakistan, Bangladesh and Maldives, and senior tri-service officers.

The inaugural session was followed by the plenary session on Defence held on the subtheme, Expanding Developmental Horizons through Education, Research and Innovations. The session was chaired by Prof. Rohan Gunaratne, Head of the International Centre for Political Violence and Terrorism Research (ICPVTR) at Nanyang Technological University, Singapore. The plenary session on Medicine on the theme of Meeting the Health Needs of Sri Lanka through Education, Research and Innovation, was co-chaired by Professor Nimal Senanayake, Emeritus Professor of Medicine, Consultant Physician/Neurologist and Professor Janaka de Silva, Senior Professor and Chair of Medicine, Faculty of Medicine, University of Kelaniya. The plenary session on Allied Health Sciences was held on the theme of Education, Research and Innovation for expanding Horizons of Allied Health Sciences, chaired by Prof Narada Warnasuriya, Senior Professor, Faculty of Medicine, KDU and one of former vice chancellors of University of Jayawardanepura. The Engineering Plenary Session held on the theme, Achieving Development Goals through Research & Innovation in Engineering was chaired by Mr. W.J.L.S. Fernando, President, Institution of Engineers Sri Lanka. The plenary session on Law was conducted on the sub theme, Law and Development in 21 century. It was chaired by His Lordship, Honorable Mohan Peiris, the Chief Justice of Sri Lanka, The plenary session on Management, Social Sciences and Humanities was held on the sub theme, Sustainable Development through Integration of Multidisciplinary Knowledge, and the session was chaired by the Chairperson of the University Grants Commission of Sri Lanka, Professor (Mrs) Kshanika Hirimburegama.

KDU research conference has become increasingly popular among researchers in diverse fields of expertise, and it is inspiring to note that the response for our call for research papers was highly encouraging. This year, the committee received more than three hundred submissions of abstracts, which enabled us to select just above 175 high quality papers to be presented at the conference. All the submitted abstracts and papers were selected through a genuine double-blind reviewing process conducted by qualified academic and professional experts. We are grateful to the expert panel of reviewers, who took enormous effort to screen papers of high quality to be presented at the conference.

Because of the large number of papers committee decided to publish proceedings in six separate books in respective discipline. This book of proceedings contains all the plenary presentations either as full papers or as transcripts and the technical session papers presented at the conference in respective discipline. This publication is the finale of the success of the KDU International Research Conference 2014 and hence it is necessary to express our gratitude to all those who contributed for its success in numerous ways. First and foremost, I wish to extend my thanks and sincere gratitude to the Chairman of the Board of Management of
KDU, Mr. Gotabaya Rajapaksa and all the members of the Board. The support and the guidance of the Board of Management of KDU have extended to KDU are indeed immeasurable.

Organizing a gigantic task of this nature would be impossible without proper leadership and teamwork. Therefore, I would like to express my sincere thanks to the Vice Chancellor, Major General Milinda Peiris, for the excellent leadership provided during the conceptualization, planning and execution of the conference; and to the Deputy Vice Chancellor (Defence and Administration) Brigadier Lal Gunasekara for his invaluable contribution as the steering committee president that ensured the smooth execution of this event, and to the Deputy Vice Chancellor (Academics) Senior Professor Susirith Mendis for his guidance in finalizing papers.

Furthermore, I wish to acknowledge the services rendered by all the Deans of the faculties, the Heads of organizing committees and their teams, faculty representatives, Adjutant, CO Administration, Registrar, Bursar, Deputy Registrar, Assistant Registrar of faculty of Management Social Sciences & Humanities and all other academic and administrative staff members. They ensured the availability of some of the best national and international experts as plenary speakers, coordinated the tedious and time consuming review process thus ensuring better quality papers for publication and organized the event in a grand level.

I also thank the technical session rapporteurs who provided us with the summaries contained herein. In addition I would like to thank the Conference Secretaries Thilini Meegaswatte and Dilani Perera on their assistance during the organizing work of the conference.

Finally, I appreciate the role played by Wing Commander Jayalal Lokupathirage, the Head of the Department of Aeronautical Engineering for his commitment in organizing and coordinating all printing work of the conference including this book of proceedings.

Dr. RMNT Sirisoma
Editor
WELCOME ADDRESS

Major General Milinda Peiris RWP RSP USP ndc psc MPhil PGDM
Vice Chancellor, General Sir John Kotelawala Defence University

Distinguished members of the audience, ladies and gentlemen, it is my greatest pleasure as the Vice Chancellor of General Sir John Kotelawala Defence University to deliver the welcome and introductory address of the KDU international Research Conference 2014.

First, I am greatly honoured and pleased to welcome Hon Dr Sarath Amunugama, Senior Minister of International Monetary Cooperation and Deputy Minister of Finance and Planning, who accepted our invitation to grace this occasion as the chief guest and to deliver the keynote address on our theme “Expanding Developmental Horizons through Education, Research and Innovation.” Sir, I am sure that your address will set the right tone for the deliberations of this international research conference, which will be of immense significance for Sri Lanka as well as for other countries that seek development through education, research and innovation.

Next, I warmly welcome Commander of the SL Army, Lt Gen Daya Ratnayake, Commander of the SL Navy, Vice Admiral Jayantha Perera, Commander of the SL Air Force, Air Marshal Kolitha Gunatilleke, Additional Secretary Civil Security and Development Mrs Damayanthi Jayarathne, Treasury Representative Mr Mahinda Saliya, Your Excellencies of the Diplomatic Corps, Senior Officers, the Chairperson of the University Grants Commission Prof Kshanika Hirimburegana, Vice Chancellors, distinguished scholars and eminent personalities especially those representing our friendly countries such as the world renowned scientist Prof (Dr) Atta-ur-Rahman from Pakistan, Maj Gen PS Mander from the Indian Army, Maj Gen MD Zahidur Rahman from Bangladesh Army, Maj Gen SM Saffudeen Ahamad, Director General Bangladesh Institute of International and Strategic Studies (BIISS) and Dr Smruti Pattanaik (IDSA), Institute of Defence Studies and Analysis of India. And I warmly welcome all the presenters and participants whose contribution will be crucial for the success of the KDU Research Conference 2014.

Ladies and gentlemen, five years after the dawn of peace, Sri Lanka is steadily marching towards development and economic prosperity under the stable and inspiring stewardship of His Excellency the President Mahinda Rajapaksa. The country is no more groping in the dark; instead it is following the clear and sound vision encapsulated in Mahinda Chinthana: The Way Forward, which gives foremost priority for education, research and innovation as essential elements for sustainable development. It is in this backdrop that KDU has deeply pondered over its role and function as a university and taken many initiatives to introduce some crucial and innovative changes in higher education to complement the nation’s attempt to expand developmental horizons through education, research and innovation.

KDU has proved that nothing is impossible if done in the right spirit, dedication and commitment. So our innovations in the field of education have paid dividends for the country. A few years ago, the scope of KDU was to produce graduated officers for the armed forces. In contrast, today, its outlook has undergone a vast change, and it proudly caters to the nation’s higher educational needs by providing opportunities for civilian day scholars to follow high quality degree programmes in a disciplined environment. Today, we offer every opportunity for Sri Lankan as well as foreign students to become well-sought-after graduates in diverse fields. The target is to produce practically oriented, well disciplined, and patriotic graduates with soft skills essential for enhanced employability.

We have also undertaken a few mega projects that directly impact the expansion of educational opportunities in the country. The establishment of the southern campus of KDU at Sooriyawewa in Hambantota targeting the introduction of some unique degree programmes in
the fields of Built Environment, Spatial Sciences etc is a major undertaking targeting expansion of educational opportunities to the periphery thereby ensuring parity in higher education in the country.

KDU hospital, the first ever university hospital in Sri Lanka with facilities for military and civil patient services, clinical trials and high-end laboratory testing, will be ready by August 2015, and it will provide assistance in healthcare for nation building. The establishment of the Faculty of Allied Health Sciences of KDU is yet another innovation that helps Sri Lanka to produce nurses, physiotherapists, and other allied health professionals whose service in developing the nation would be of considerable value.

Ladies and gentlemen, the conventional wisdom informs us that education expands horizons of knowledge which in turn facilitates innovation, and thus the rationale for expanding educational opportunities in a country. KDU having clearly understood its responsibility in this regard works as an agent of change in several significant areas in tertiary education in Sri Lanka. Accordingly, we have dedicated ourselves to linking education with research and innovation through several important projects, programmes and initiatives. For instance, KDU is developing its scientific research wing under KDU Institute for Combinatorial Advanced Research & Education known as KDU-CARE. The objective is to discover, implement and operate state-of-the-art scientific technologies which would enhance KDU’s scientific education and medical research capabilities.

KDU-CARE is progressing well and by now it has commenced 11 scientific projects as public private partnerships. We are in the process of establishing KDU-CARE Technology Park in KDU Southern Campus in Hambantota. Moreover, 4 factories – 2 in Sooriyawewa, one in Sewanagala and another in the hill country – will be set up in the coming months. We have attracted significant amount of funds as investments for these ventures. For the first time in Sri Lanka we will be constructing a Good Manufacturing Practices (GMP) certified manufacturing plant for producing antibodies and vaccines especially focusing on the production of anti venom for Sri Lankan poisonous snake bites. Further, we have introduced a Dean Research position first time in Sri Lanka to invigorate the research culture in the university.

We have established a 24’X7’ research laboratory and a state-of-the-art advanced proteomics and genomics laboratory to facilitate the conduct of high-end research at KDU.

We have also introduced attractive incentives to encourage conduct of research, publications in high impact peer reviewed journals, and applications for patents. We believe that these measures we take today will definitely pay dividends for Sri Lanka in the near future.

The initiative taken by the Faculty of Graduate Studies to offer opportunities to read for research degrees at Master’s and PhD levels and KDU CARE are expected to generate high caliber researchers required for the country and its development.

Ladies and gentlemen, I make this an opportunity to make the humble claim that, all in all, KDU is playing a leading role in expanding higher educational opportunities in Sri Lanka thereby making a considerable contribution to make Sri Lanka a knowledge hub in Asia as envisaged in Mahinda Chinthana.

Ladies and gentlemen, I should also express our grateful thanks to HE the President and his government for their blessings and encouragement for our initiatives; to the Secretary Defence, Mr Gotabaya Rajapaksa who is the tower of strength for KDU for his invaluable guidance in his capacity as the Chairman of the Board of Management, KDU; Commanders of the Army, Navy and Air Force, Additional Secretary, Civil Security and Development, and the Treasury Representative as members of the Board of Management for their diverse contributions for the upliftment of KDU.

Ladies and gentlemen, KDU’s annual international conference is a major contribution to the creation and dissemination of knowledge. The conference links other universities both local and foreign, higher educational institutions, professional bodies and the industry by providing a platform for their academics and professionals for presentation and publication of research in many fields of specialization.

It is heartening to note that this year the conference secretariat received an overwhelming
number of abstracts out of which 195 were selected for presentation through a thorough peer reviewing process. Let us look forward to participating in highly fruitful plenary and technical sessions that will be held today and tomorrow at KDU.

Finally, let me conclude by once again welcoming all the dignitaries, intellectuals, and participants foreign and local and wishing that the deliberations of this conference would mark a positive contribution for the betterment of Sri Lanka, as well as the rest of the world. I conclude by wishing that KDU international Conference will be a fruitful and memorable one for all presenters and participants alike.

Thank you.
KEYNOTE ADDRESS

Expanding Development Horizons through Education, Research, and Innovation: In Relation to Defence and Defence Universities

Dr. Sarath Amunugama

Senior Minister of International Monetary Cooperation and Deputy Minister of Finance and Planning, Ministry of Finance, Sri Lanka

I am most grateful to the Vice Chancellor of KDU for inviting me to be here this morning and to speak to you on the subject of the development paradigm and education and science and technology. As we all know, this is a very important subject and we in Sri Lanka have quite a lot of experience in terms of innovation in education and trying to relate education to development. I want to begin with Millennium Development Goals. You know that heads of state met several years ago at the United Nations and identified 15 basic goals which the call the Millennium Development Goals. Which were to be achieved by 2015. That was the basis of what was called the Washington Consensus. While the developed countries would find funding for growth in developing countries, the developing countries, or the leaders of the developing countries has pledged to make every effort to reach those developmental goals among which were education and health. I am happy to say that of all the countries that were involved in this MDG exercise- after all now we are all close to 2015 and we can evaluate whether we have succeeded in reaching those goals or not- Sri Lanka figures as a very good performance; gets very high marks in that scorebook for achieving the MDGs. So we have something to offer and discuss, when it comes to the contribution made by social welfare, by education, by health, to the development paradigm.

We must look at some of the theoretical arguments regarding what is called comparative advantage that is in the globalized economy, when we think of economic development or economic growth, we have to analyze of all the factors and advantages that a country has, how do we position it in terms of comparative advantage. Different countries have different advantages. So in order to stimulate growth, we have to somehow identify those assets, those characteristics which give us comparative advantage as against rival economies or as against other competing economies. Now I want to refer (which I had also referred to at the last Defence Seminar) to the work done in the World Bank by the research division of the World Bank, where they are talking of what is called new structural economics. And what is the basis of that. The first is that today we are in a globalized economy. We cannot think of the national economy if we want to think of high growth of making the country rich and acquiring wealth that all the people in that country can benefit from that acquisition of wealth, which is reflected in technical terms as GDP growth. Now in Sri Lanka, we have a very enviable record, because after the end of the war a little over five years ago, we have had a very attractive GDP growth between 7-8 percentage points, which compares very favourably, not only with the earlier leaders of global growth, namely China and India- but also with the traditional developed countries. As you know we are just emerging from a global downturn, global economic crisis, which first hit America, then the European Union countries, and subsequently impacted on the economies of China, India, Vietnam and so on, which were largely dependent on trade with these advanced economies.

Now in that context, Sri Lanka has done extremely well, averaging 7.5 to 8 percent growth and is now a member of the consortium of countries which are now driving global growth. The IMF and World Bank have estimated global growth to be in the region of 4 percent. Here, we are consistently reaching 7 to 8 percent growth which is very high. Now how do we maintain that, what is the basis of that. So one is our integration with the global economy. That is number one. Number two, is as I mentioned, to try to see within that global economy, what are our specific strengths and what is our comparative advantage. Number three, is to see what is the role
of the state in this growth process, particularly in relation to comparative advantage. Now in the past, there have been different approaches. Some have felt that only the state should be doing this in the past. That was not much of a success, because you saw that very many state ventures were not profitable, it dragged down the economy, and then there was a shift to the open economics. It sometime went to the other extreme. For example, even after the fall of the Soviet Union, Harvard University Professors were prescribing how the Russian economy should be tailored. It came to such an almost ridiculous situation where free market economies were prescribed for the whole new Russian state because by that time the Soviet Union had disintegrated, the blueprints were being made in the Harvard University. So that is the other extreme. But today, we are looking at the interface. What is the role of the state, and what is the role of the private sector, and how can they jointly look into or assist in the growth process. So that is the third element. What is the mix between the state and the private sector? Now in the fourth area, we are looking at some aspects of how the state can make a distinct contribution together of course to help the private sector come into the picture. And that is called the provision of infrastructure, of two classes. One is what is called hard infrastructure, and the other is called the soft infrastructure. I am just giving a very broad definition. Hard infrastructure is that you cannot really think of benefitting from the globalized economy, unless you have roads, ports, airports, guaranteed energy. All those basic ingredients that will make your economy competitive. Now if you take South Asia, in a way I am sorry to say that only Sri Lanka can guarantee 24/7 power supply. All other countries in our region have power shedding. You cannot get power all the time. We too went through that period some time ago when we had to tell the investors you better bring your generators along.

That is not a very nice way of greeting an investor. But today Sri Lanka has achieved a situation where we are in a position to guarantee a continuous supply of power and we are hoping that over a period of time to make power cheaper. Then we have invested very heavily on roads, ports and airports, so one aspect which is not the focus of this seminar but very important is the investment in hard infrastructure that is contributing to our growth and that is now universally recognized as a very positive development in Sri Lanka in the Post-War period. Because we lost the possibility of expanding the physical infrastructure for thirty years. When a country is engaged in a destructive war which we won thanks to our President and to our distinguished army and other services represented here, where we were able to defeat terrorism comprehensively and catch-up on that thirty year lacuna. But that is not the subject of discussion in this seminar.

In this seminar we are talking about soft infrastructure. A country must also engage in creating the soft infrastructure that is necessary for growth. That is in this development paradigm of comparative advantage and many other things. In the earlier seminar I spoke about our global positioning and our geostrategic position, so we need not go into that today. So we are thinking of our comparative advantage in a globalized economy where the state and the private sector works together and now when we think of infrastructure we are going now into the area of soft infrastructure which means a modern educational system that can help in the growth process. So that is where we have to look at the question of education. Now, I think it is more than obvious to all of us, and certainly what we learn from professional educationists, is that we must move towards a scientific culture. The modern world of today and of the future will move towards a scientific culture. So our educational system has to be geared to providing the wherewithal and the investment to create a scientific culture in our economy. If we are not willing to do that and make the necessary investments our growth process itself will be impeded.

If you look at the Sri Lankan experience in education you can see that we have been moving towards it, but moving rather slowly. In the first phase Sri Lanka has a very enviable record because from the 1930s we have been emphasizing the role of education. Before independence in the State Council high priority was placed on providing education not only in the urban centres, which is the normal fashion in which education develops in most other countries, but education which spread out also to the rural areas. We generally call all that the Kanangara reforms or the Free Education Reforms, Sri Lanka underwent very progressive educational reforms in the late 1930s and early 40s when what was called the Free Education System was set up. There were three pillars to that
educational system which we have now forgotten. One is, education free of cost, where all Sri Lankans had the ability to go to a school, a state funded school, or private schools at that time which got government assistance, like the Buddhist Theosophical Society, and they could get expect to get an education at least up to secondary level free of charge. But that was only one ingredient in that package the second ingredient was education in the English language. That was part of the reforms. Third, was what was called the Central College System, where there were residential colleges dotted throughout the country where bright children could attend and in any large audience in Sri Lanka you will have many people who have built their career on that system.

However, at a certain stage pressure was created on the educational system by population growth. The present government has had to revamp that whole educational system where you push the educational system towards a science culture. That is what you now call the Mahindodaya System where the government is going to reorganize the whole educational structure where the country will be dotted with a large number of science colleges with dual languages and a large investment in Information Technology. This requires a large investment which is going to take some time. This requires a public-private partnership which delivers the necessary services to the people. This entire transformation has to be driven by a scientific culture.

When we were young I think Daya and all will remember, it was very difficult to get a telephone. When you are a young officer it was almost impossible to get a telephone, you have to go to so and so and so on. But today within ten minutes you will get the mobile phones. There are 220 lakhs of telephone circulating in this country. There are 2.7 million 27 lakhs of motor cycle in this country, of the population of 20 million population, one million three wheelers. We have over five thousand trolleys which have gone into rural areas and other area. So, transformation is taken place which means a new scientific technology. In the past people could not get to even their bicycle repair? They had travelled a special place to repair it. But today we are introducing a new science and technology oriented culture which will create so many job opportunities.

If you look at the agricultural sector, we cannot get people to go back to the same old system of agriculture. You take buffalos or have a blown or going in a spinlock I mean that is simply not possible. And as a result what is happening is that in real terms our agricultural is expanding, but in terms of share of GDP it is being reduced. That is a normal phenomenon. As country grows the agriculture sector shrinks in relation to GDP. In real terms it expands, but more wealth is being created in the manufacturing and the service sector. Our service sector very much like tourism, like construction, like infrastructure development, financial services are expanding in terrific way. We want to make Sri Lanka a hub in Asia and that is our next step. To make it a knowledge hub we have to make it to a joint enterprise. Earlier the state had to do everything but today state is not a position to make all these investments. So it has to be shared. I’ m very glad that the chairman of the UGC is also here, because somewhere it has be shared, because we have to confront that problem.

Lastly, many of our young people go to foreign universities. Our education system is better than the education systems of some of these countries. Lots of middle class people are spending money to send their children abroad. This is because the state system has not expanded enough to include these people. Now as we just heard from the Vice Chancellor of this university there are other new areas where we will have to expand our tertiary and university education to gather this vast potential of scientific oriented people who will otherwise be utterly frustrated prevented from doing their higher studies because of policy difficulties. So we have to change the policy to make Sri Lanka an education hub and that is the next step to be undertaken.

While we have a very innovative garment sector and are going up to the top end of the garment industry in the process of becoming a middle income country we did not get the GSP +, the preferential tariffs which were given to certain countries, particularly by the European Union. The US preferential tariffs still remain. But our garment industry has adapted itself. It is very good example of modern technology being used, high-end scientific technology, and today, though of course it is a component of a global textile industry. Ours is a highly innovative up market garment industry. I think all of you have visited some of our malls here, I don’t want to mention names because that will
give an unfair commercial advantage, but you have a lot of malls here and you can see the quality of the products. The cost is very reasonable and the product is of a high quality, that is the type of garment industry that we have developed. It is a US$ 10 billion enterprise. Then we also have tourism. It is also growing very fast. By next year we expect 2.5 million tourists to come in to this country. These are all in the service sector which requires new thinking, innovation, these are new areas which will also impact our domestic sector. Even in agriculture we cannot think of sustaining agriculture unless we can modernize with new equipment. Recently we had a discussion in parliament about the eastern and northcentral provinces, and about how they have brought in a new harvester. Because earlier where they used very simple mechanisms now with this new mechanism they can do a much more efficient job. So that sort of innovation is needed. Earlier we had to bring workers from India to handle that machine but now Sri Lankan young people in villages are able to manage that large scale harvester. So that type of scientific and technological culture has to be created. Particularly in a small country where we have to go for niche markets and innovate, we have to create an educational system and space for a general growth pattern for this new scientific community. So I think that we are going through an interim phase. We are completely revamping our education system, still we are at the level of primary education and basic education but as we go along it will impact our secondary education, tertiary and then university education and like that it will go along. So once you set this new curriculum and new structure, once you set it loosely, obviously it is going to have an impact on higher classes in the years to come. So we have to plan for that. So that is what I see in the new development paradigm. A key role will be played by science and technology and by education because it will be a link to whatever comparative advantage that comes to us by the nature of our physical positioning, by the nature of the markets, by the nature of human capital, by the nature of government investments, and all those other variables. Science and technology will play a key role in positioning the country in a competitive stance in a highly global economic situation.
PLENARY SESSIONS

Sustainable Development through Integration of Multidisciplinary Knowledge
PLENARY SESSION SUMMARY

Youth Bulge for Sustainable Development
An Emerging Challenge for the 21st Century Sri Lanka

W Indralal De Silva

Senior Professor of Demography (Chair)
Department of Demography, University of Colombo
&
Senior Research Fellow, National Centre for Advanced Studies - UGC

Senior Professor W. Indralal De Silva first spoke about the Demographic Change in Sri Lanka, there he has defined the term “youth bulge”. Senior Professor mentioned that the term “youth bulge” is used to describe a population in which the proportion of the youth (age between 15-29) is significantly large compared to very young and the old population in Sri Lanka, there he emphasized, although Sri Lankan population is ageing as with other developing nations, still Sri Lanka possesses of youth. According to the survey results it is 23% in 2012 and it is estimated 21% in 2021).

"Youth Bulge" does not necessarily embark with challenges and difficulties for a particular country, especially for a developing nation, rather it can help in development process of a nation where the majority of the population can be involved with. It can be achieved through youth development directed to youth participation and finally nation can achieve Youth-led development which is depicted as follows.

Further Professor mentioned that “youth bulge” can lead to favorable demographic dividend which provides a window of opportunity for economic take-off. During the demographic dividend, the dependency will be at minimum level as highest proportion of population will be in working is that is age between 15-59 or 16-64. Hence demographic dividend would have a positive impact on economic growth. But as professor explained demographic dividend alone is not sufficient for an economic take-off, it require other variables as;

1. Political Stability
2. Savings and investments
3. Productivity
4. Knowledge economy where business involvement, information infrastructure, innovation system and human resources are in well order.

Professor W. Indralal De Silva showed the Age structure transition and prevalence of Demographic Dividend, Sri Lanka during his speech in graphical manner as follows.

Furthermore Professor Indralal De Silva explained the youth bulge and demographic dividend in Sri Lanka compared to other Asian Economies, where he explained that Between 1980-1990 a rapid economic growth was observed in South Korea and India is expected to main the rapid economic growth achieved up to 2014 to 2015-2050. Moreover he mentioned that in Sri Lanka 1991-2030 working age is defined as 15-64 in which Sri Lanka still remain 16 years and 1991-2017 working age is defined as 15-59, in which 3 years still remain
for the dividend, and that shows Sri Lanka is the leader in South Asia due to the demographic dividend.

<table>
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<tr>
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<tr>
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</table>

Source: Youth Development Index Results Report, 2013

Secondly, Professor talked about education and computer literacy of the youth in Sri Lanka. There he has done a comparison based on Population Reference Bureau 2013 on enrollment in Tertiary education of age between 15-24 in developed countries, developing countries and least developed countries.

There he explained that there is a high enrollment in tertiary education of female and male in developed countries such as Australia and United Kingdom compared to developing Countries. In that situation female enrollments are higher than the male enrollments in developed countries. When it comes to least developing countries tertiary enrollments of both male and female is considerably low. But sometimes it shows there is no much difference between some developing and least developed countries such as Swaziland, Niger and Kenya. According to professor W. Indralal De Silva net enrollments in school education between grades 1 to 13 is decreasing and that may be a one reason for lower enrollments in tertiary education in Sri Lanka.

Thirdly, Professor Indralal has discussed about performance of public schools up to G.C.E (Ordinary Level) examination and there he explained that there is a significant improvement of students who are qualified for G.C.E (Ordinary Level) during the period of 2009-2012 which is from 48.4% to 62.3%. But according to the statistics still there is 40% who leave school education after G.C.E (Ordinary Level) examination. Hence, drop-outs before and after G.C.E (Ordinary Level) is a crucial issue as they do not obtain adequate and complete school education as a sound foundation for their future as the basis for any employment in the formal sector is the successful completion of the G.C.E (Ordinary Level) and these students do not have the basic lowest qualification. Further professor explained that even the percentage eligible for the university admission is more or less 50% of the total, admissions as a percentage of the eligible is significantly low.

Next professor discussed about the computer literacy and the ownership in Sri Lanka from year 2006-2010. According to the statistics Computer Literacy level of Youth in National Level is increased 52% to 65% in 2006 to 2010. Ownership to computers and ownership to mobile phones are also increased due to the above reason now it is;
Finally professor discussed about ‘youth health’ and ‘migration desire of the youth’. There he made the following comments:

**Youth Health**
1. 7% of teenage pregnancies, highest in estate sector, <50% knowledgeable on reproductive health
2. 63% of malnourished women are youth, 33% of female youth are anemic
3. Deaths due to suicides highest among females of 20-29
4. 26.7% tobacco and 27.3% alcohol users belongs to age 15-24
5. <50% knowledgeable on HIV/AIDS and other Socially Transferable Deceases. Only 57% had some awareness on Socially Transferable Deceases.

**Migration desire of the youth**
1. 51% of youth desire to migrate for work
2. 31% wish to migrate on more permanent basis.
3. More men, Tamils & Muslims desire to migrate than others.

At last professor has concluded his speech by highlighting the following important points related to “youth and youth bulge” in each country the population size & age-sex structures are changing- Youth Bulge. Demographic environment is conducive for economic take-off. Presently lowest level of dependency prevails. The take-off could provide sustainable benefits to all segments of the population, including Youth. Demographic dividend alone would not sufficient enough for economic take-off (Educated, healthy & productive Y). Hence, Youth - it is an opportunity that should not be missed.
Transport and logistics is said to be the dominant factor for the development of the country’s economy and the welfare of the public. A sustainable transport system yields considerable economic and social benefits where as an inefficient transport system with regard to capacity or reliability results in more economic cost or opportunity costs. In general, logistics cost can be well understood in terms of inventory carrying cost, transportation cost and logistics administration cost.

Globally, the demand for energy seems to increase 1.5% annually. Transport itself takes 26% of the global energy consumption where it is 50% in Sri Lanka. Notably 60% of the fossil fuel is consumed by transport sector. Hence efficient usage of energy has become vital. Thus the overall energy efficiency can be derived from the following formula.

\[ \text{Overall Energy Efficiency} = \text{Vehicle efficiency} \times \text{Travel efficiency} \times \text{System efficiency} \]

Hence the improvement of efficiency is felt well in transport and logistics sector. It can be achieved by reducing the demand for motorized trips, efficient use of transport modes, and effective management of traffic flow and effective use of individual vehicles. Transport and logistical competency is highly dependent on the coordination of these four strategies thus the competitive advantage can be thought of to achieve commercial success.

To improve efficiency and to integrate the above mentioned strategies, there are theoretically operation research tools that can be applied on situations. But the reality is the industry does not show much interest on these tools as they think that they can solve the problems and run their daily routine through experience. The commonly used operation research tools are as follows:

- Statistical analysis
- Simulation
- Linear programming
- Network models
- Inventory theory
- PERT/CPM
- Queuing theory
- Non-linear programming
- Dynamic programming
- Game theory
- Decision theory
- Risk analysis

Going back to the industrial revolution era, all resources were fully used to get the best use and convenience of the mankind. But in the course of time, it resulted in specialization through increased division of labour and segmentation of management responsibilities. And now it has become well realized that resources are limited and they need to be used in an efficient manner.

Starting at World War II, Operations Research was highly used for the successful allocation of scarce resources to required activities. This concept captured the other industry as well after its successful usage at this war. Two similar disciplines were developed together as Operation Research, which deals with management of operating systems & System Engineering, which concentrate on analysis and design of systems.

A problem will appear in supply chain or any business when there are some objectives to be achieved. And there will be many ways to solve that problem where as the feasible alternative will not be apparent. What the Operations Research Tools will do is that the objectives will be clearly defined, the alternatives will be identified and these alternatives will be tested against optimization.

In general the mathematical models will have set of decision variables, objective function and set of constraints. Following are some of the examples for the mathematical models that are commonly used to achieve the above mentioned purposes in the organization.

Linear programming which is concerned with allocating scarce or limited resources to known activities with the goal of maximizing or minimizing the value of a given objective function (often profit or cost).
Dynamic programming which depends upon the representation of a multi stage decision problem as a sequence of single stage problems. This can be represented in optimum allocation of available resource.

Calculus is where problems with multiple variables with or without constraints can be handled using this technique.

Network analysis will help to deal with flow of the network with respect to capacity constraints. It will help to identify the shortest paths in the network and minimum spanning tree which deals with the construction of road or path at minimum cost while ensuring all the places were visited once.

Therefore, the use of mathematical tools will help bridge the scarce resources and efficient way of usage of these resources which is a best way to manage supply chain beyond the basics.
I. INTRODUCTION

This paper is on Education for Sustainable Development and it would focus on the following sub topics.

- Define Sustainable Development.
- Define Education for Sustainable Development
- Goals of Education for Sustainability
- The achievements in relation to the goals
- Challenges and way forward

II. SUSTAINABLE DEVELOPMENT

There are many definitions on Sustainable Development which shows that it encompasses a wide spectrum of fields. However, even though there is no consensus regarding what it is, there is no uncertainty about its importance. For the purpose of this paper, I would consider the original definition of sustainability stated in the World Commission Report commonly referred to as the Brundtland Commission report.

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p 43).

The concern for sustainability as a global issue rose as a result of the understanding that economic development while it is the driving force of any nation has its negative effects as well. Sustainable Development includes three main areas as shown in Fig.1

In the past it was believed that it was inevitable that economic development would affect the environment and society. However, today it is accepted that the well being of these three domains are interwoven. For example, industrial fumes affects the environment which results in an unhealthy society.

In spite of this concern on Sustainability key challenges to the three main domains continue. Some of these challenges are:

- human-induced climate change,
- the rapid depletion of natural resources,
- the frequency of natural disasters,
- the spread of (old and new) infectious diseases,
- the loss of biodiversity,
- the violation of human rights,
- Increased poverty,
- the dependency of our economic systems on continuous growth in consumerism

How to overcome the challenges?

Education is an essential tool for achieving sustainability. There is world wide recognition that current economic development trends are not sustainable and that public awareness, education, and training are key to moving society toward sustainability. As Nelson Mandela stated “Education is the most powerful weapon you can use to change the world.”
The role of Education in Sustainable Development was emphasized in a chapter on Education in Agenda 21, which was adopted as a result of the Earth Summit of 1992. Recognizing the power of Education for sustainable Development the UNO declared a decade 2005 - 2014 as the United Nations Decade of Education for Sustainable Development. Hence it is fitting that the theme of this conference which is held in 2014 - the end of the decade is Expanding Developmental horizons through Education, Research and Innovations

**Education for Sustainable Development**

Education for Sustainable Development means including key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction.

Education for Sustainable Development allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future. ([http://www.unesco.org/](http://www.unesco.org/))

According to the ESD description/definition as provided in the original Decade of Education for Sustainable Development Monitoring and Evaluation guidelines document

Education for Sustainable Development (ESD) is a learning process (or approach to teaching) based on the ideas and principles that underlie sustainability and is concerned with all levels and types of education. ESD supports five fundamental types of learning to provide quality education and foster sustainable human development – learning to know, learning to be, learning to live together, learning to do and learning to transform oneself and society (p.26)

Thus is could be seen that ESD is a planned systematic process of education. It emphasizes not only knowledge, but attitudes, skills, and practice. It is a learner centered approach where the types of learning necessary have also been identified. ESD has its own identified goals as well.

**Goals of ESD**

According to Agenda 21 the goals of Education for Sustainable Development are

1. Improve basic education,
2. Reorient existing education to address sustainable development,
3. Develop public understanding, awareness,
4. Training (Chapter 36 of Agenda 21)

When the above goals are considered the improvement in basic education is apparent in most of the countries. In Sri Lanka the net enrollment in basic primary education is 96%. which is satisfactory.

If one considers the number of ‘hits’ or websites generated using the search engine, Google, as an indicator of the presence of a phenomenon in society and if the growth in these hits over time is an indicator of an increase of this presence in society, the following statistics is significant regarding the second goal of ESD.

On March 29th 2005, the year of the start of the DESD, a Google search for “Education for Sustainable Development” yielded 89,000 websites. On January 29th 2009, almost four years into the DESD, the same search yields 215,000 of such websites. This represents a ‘Google growth of 142 per cent. On August 20th 2014 almost a decade later the same search yields 47,800,000.

There are numerous programmes in Sri Lanka to raise awareness among the public regarding different aspects of Sustainable development. Shramadana campaigns, tree planting programmes, mosquito and dengue eradication are some such programmes. These are organized by the public as well as non governmental sector.

This paper concentrates on training in one sector – namely the training of teachers. The National Colleges of Education are the prime institutes for training pre service teachers. They produce around 3000 teachers of various disciplines to the teacher cadre. A training manual has been prepared to train these trainees to integrate peace and sustainability in to the curriculum and pedagogy.

The manual is the outcome of a UNESCO – New Delhi Co – ordinated project supported by Japan Funds –in-Trust Co-operation on Training of Trainers on Post Conflict peace building to promote quality and innovation in Teacher Education through ESD. The manual consists of two parts. While part one contains the theoretical basis for ESD, part 2 consists of an activity guide with 22 model activities reflecting the three dimensions of Sustainable Development - society, environment and economy.
One such activity based on the theme of ‘let’s manage waste” is given in annexure 1.

The identified objectives of this activity relate to knowledge, skills and practice. Further, five values to be embedded through this activity are also stated. Therefore, it could be claimed that this activity confirms to the definition of Education for sustainable development.

On paper it appears that Goals of ESD have been achieved. Yet, have we really achieved ESD?

The Reality

The following photographs taken in the city of Colombo illustrate the reality of ESD. Is this sustainable development?

Photo 1: Garbage Bin near a hotel in the early morning.

Photo 2: A newly constructed manhole has become a garbage bin!

Photo 3: Different types of garbage dumped together. Further, this illustrates the irresponsible behavior of the person who should have locked the door.

The message that these photos convey is that even though people have the knowledge on Sustainable development, inculcation of values has not taken place.

Lessons from the past

It was the West that had a “disposable culture”. Sri Lankans’ on the other hand had a “Handing down culture”. Things were handed down from grandmother to daughter and to the grand daughter. The elder sibling in the family knew that s/he had to look after the clothes or books as they had to give them to the younger sibling. Yet, today the situation has changed. The State provides free textbooks and free uniforms. No one is willing to take an old book. Even though there is a policy that old books have to be reused and only badly damaged books should be sent for recycling in most schools the situation is contrary to the policy. There are no storage facilities in schools to store the damaged books or systematic centralized recycling process. After collecting dust and further polluting the environment in some schools books are at the instruction of the authorities burnt by the pupils themselves. Can we call this Education for sustainable development? Thus even though the textbooks have many examples of the concept of sustainable development in all subjects taught, what is practiced is different to the theory.

All religions teach the concept of sustainability. In Buddhism, Vinaya Pitakaya states that a Monk is expected to wear a robe when it is torn by darning it. When it is not possible to darn it any further the robe has to be used as a rug. As it becomes unusable as a rug it would be used to be mixed with the clay to build a wall. In Christianity God created the earth, the plants, the animals and finally man.
He was asked to look after the earth and all its inhabitants including the fauna and flora in both the Quran and the Hindu Vedas there are many references to the need to protect the environment.

Yet in spite of our cultural roots and religious beliefs we are today moving towards a disposable culture even surpassing the West. How then can we use Education as a weapon to change the world?

The way forward

Many topics inherent in ESD are already part of the formal education curriculum. But these topics are not identified or seen to contribute to the larger concept of sustainability. Identifying and recognizing components of ESD in all subjects is a key to moving forward. In this regard English Language Lecturers can play a major role. As the teaching approach is changing to Content and Language Integrated Learning (CLIL), the lecturers can select content from any subject discipline which can be connected to SD. Such a topic can facilitate the teaching of all four language skills. However, as already discussed knowledge alone is not sufficient.

To create an ESD curriculum, educational communities will need to identify

- knowledge,
- issues,
- Attitudes,
- Skills

Central to sustainable development in each of the three components - environment, economy, and society. Figure 1 is one such example.

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>accounting</th>
<th>issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>environment</td>
<td>hydrologic cycle</td>
<td>economy supply and demand</td>
</tr>
<tr>
<td>Issues</td>
<td>protecting and managing freshwater; managing hazardous wastes</td>
<td>combating poverty</td>
</tr>
<tr>
<td>Skills</td>
<td>the ability to acquire, manage, and analyze data</td>
<td>the ability to identify components of full-cost</td>
</tr>
</tbody>
</table>

Inculcating values and attitudes are the most important aspect of ESD. It has been argued whether values could be taught overtly in the schools or whether they would be caught. Though values are being taught or caught, they would not become practice unless they are inculcated.

Therefore, the reason as to values inherent in ESD not been practiced may be due to the fact that they are neither taught nor caught. In both situations, understanding values is an essential part of understanding your own worldview and other people’s viewpoints. Understanding your own values, the values of the society you live in, and the values of others around the world is a central part of educating for a sustainable future. Therefore, it is essential that values are both “taught” and “caught.”

In order for the values to be taught the teaching approaches need to be changed. Following are some of the approaches that could be used.

- Issue analysis

Issue analysis is a structured technique for exploring the environmental, social, economic, and political roots of problems that face communities. Issue analysis helps pupils identify major arguments related to a community problem as well as key stakeholders and their perspectives, goals, and assumptions related to that problem. Issue analysis also looks critically at the proposed solutions and the costs—financial and otherwise—and at who will bear those costs. Issue analysis can be done briefly or in depth. Issue analysis is interdisciplinary, bridging the natural and social sciences.

- Simulation

Concepts associated with sustainability are often abstract and complex. Simulations reduce complexity and highlight salient aspects. Simulations give concrete ways to teach abstract concepts. Providing concrete examples for abstract concepts is especially important for children and adolescents, many of whom are still in the concrete stages of cognitive development.
• Picture Discussion

“A picture paints a thousand words” – photos of critical issues would facilitate issue analysis as was shown in this presentation.

In order for values to be caught the most essential factor is role models. As long as teachers and parents are not role models in maintaining sustainability and they contribute to the “disposable culture” ESD will continue to be a challenge. Therefore it is up to the teachers and parents as Mahatma Gandhi said to “be the change that you wish to see in the world”, if you think you are too small to contribute to ESD remember this African proverb,

“If you think you are too small to make a difference, you have not spent a night with a mosquito”.

Unless and until you change, you have not achieved the five fundamental types of learning to foster sustainable development – learning to know, learning to be, learning to live together, learning to do and learning to transform one self and society.

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Managerial Innovations of the State University System in Sri Lanka: An Exploratory Study

Professor RLS Fernando

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In the first part of the presentation she emphasized one of the intentions of the university system is to produce employable graduates with the essential knowledge, skills with positive attitudes in order to provide human resources for the development process of a country. In this context, the role of the Sri Lankan government is noteworthy. The total expenditure incurred for the education has been provided from the General Treasury. Thus, the education is imparted free of charge. This situation has long been contributed for empowering nation’s human resources.

The government allocates 2.08% of the GDP (CBR:2009) to maintain the entire education system. The expenditure on education has been gradually reduced for the last several years (the government allocated only 2.59% and 2.27% of GDP for the years of 2007 and 2008 respectively). The lack of financial resources has been one of main constraints being faced by State universities. This situation has been negatively affected in improving quality and relevance of the undergraduates. Under this situation University authorities face much difficulties in implementing their plans and producing “Quality graduates”. Despite these constraints the universities could not reduce or end up the expected service delivery. Thus, this research paper argues that the university administration has to find alternatives to achieve its intended objectives.

If academics perform in innovative ways in managing their educational programs, that would lead to improve the quality and the relevance of their output leading to more effective and efficient administration. The importance of innovative managers for the public sector organizations has been highlighted by several western scholars.

Improving performance of the public service is the key challenge faced by managers in the public sector organizations. The main aim of the study undertaken on “Managerial Innovations of the State University System In Sri Lanka was to examine the utility of innovation theory in the university administration in Sri Lanka.

Then the research questions explained as: what would count “innovation” in the university administration? , what are the benefits of managerial innovation in the university administration, what are the main factors affecting innovation in the university administration? and what can be done to improve innovation in university administration in Sri Lanka?.

Then she explained about the methodology of the study. In the explanation she emphasized the study carried out in a qualitative approach. The Sample selected for the study comprised of 20 administrators and occupied purposive sampling technique. The participants in this research were the Coordinators, Heads and Deans of the Faculties of the Universities in the Western province. Further, the sample was selected based on the reputational snowballing technique. Data collected through In-depth interviews. Data analysis mainly based on the Thematic and Content Analysis. In addition to that descriptive analysis was undertaken with substantial description to identify characteristics and behavioral patterns of the administrators, and their experiences related the objectives of the study.

Theoretical Background of the research on managerial innovation explained as “As generation, acceptance and implementation of new ideas, process, and products or services” (Thompson, 1965). Interest in managerial innovation in the Public sector New Public Management, Managerialism, Reinventing Government Principles, Public Sector Management Reforms, Peter Drucker (1994) emphasizes the importance of innovation in the public sector for the success in their organizations.

Demographic Characteristics of the Sample consists of 15 are male, 2 are Deans, 17 are Heads of Dept., 10 are from the Faculty of Mgt Studies & Comm., 4 of them are from the Faculty of Engineering, 4 of them from Arts and Humanities, Only 3 are Professors and 12 are senior Lecturer Grade 1, 16 administrators are Ph.D holders, The minimum age is 41 years and the maximum age is 57 years.

Professor Lalitha explained what is meant by Managerial Innovation in the University Administration according to her findings of the study as, “Novel ways and means to manage the resources in effective and efficient manner to improve the quality of the graduates”, “Introducing and implementing systems of management by using new ideas for improving efficient and effective degree programs”, “Improving the quality of the graduates including their values to achieve sustainable development of the society” and “Initiating and implementing strategies and activities to overcome constrains and also to exploit opportunities existing in the environment”.

Innovative practices introduced by the participants of the sample were to Introduce a “Mentoring Program” with the selected private sector organizations. Students were trained under the supervision of a CEO in the selected business organizations to enhance the students’ required skills and improving the relevance of the graduates to the job market, introduced “Industry consultation Board”. Several discussions were undertaken with the selected managers of the industries to get the ideas and comments for designing and revising curriculum of the academic programs, introduced a “self finance program” to provide various services to the community and also to generate income to the university, started “Knowledge Centers” where students and the teachers could get various benefits for their teaching, learning and research, introduced a “Unit for Statistical Case Studies” to learn and undertake various projects for improving the statistical knowledge of the students and to provide services to others. Then as another finding of her study she explained the view of the participants about the benefits obtained from innovative activities as reduced students’ dropout ratio, improved the students’ various skills, creativity and decision making skills, report writing capabilities, English and presentation skills, earned more recognition from the other departments of the university and also from the outside the university, improved linkages between the universities and the employers in the job markets, so that the graduates were able to find job opportunities without waiting longer time period after their graduation improved the relationships between the students and the lecturers, changed the bad attitudes of the employers regarding the university graduates in the job markets, improved the students’ satisfaction and confidence with the academic programs by improving students’ active participation for the university activities, improved physical and other resources of the department as several innovative activities were generated financial resources. Thus, both students and lecturers were benefited.

Determinants of Managerial Innovation in the University Administrators’ need to achieve explained by different participants as “I need to do something to my country as we are products of free education”, “I want to do something to the country as I received much from the free education in Sri Lanka. By doing that I can get more self-satisfaction”, Others’ motive is to solve students’ problems, improving the skills and the quality of the graduates by introducing and implementing different ideas and activities. Supportive internal environment (support from the academic staff) “New activities and innovative behavior can be done with the support of the department”, “Corporation among the staff is very important to introduce new ideas and changes”, “Junior academics’ support could be obtainable without much difficulties than others”. Another significant factor to enhance innovations is to obtain the support from the external environment. Therefore, other organizational supports are more helpful for innovative activities. These supports could be obtainable in various ways both financially and physically. She emphasized that some departments in universities offer various facilities and services...
which are different from the normal activities as various organizations in the private sector and public sector supports them. Another utmost important factor is the Skills of the Human resources. As a result the support of the non academic staff who must be competent and experienced

During the policy implication for improving innovative behavior of the University Administration an emphasis should be given on the selection and the appointment of academics for administrative positions who have positive attitudes with more dedication towards public values. At the recruitment of the academics, the above mentioned matter should be equally applied. When obtaining the external environment support, the mass media has a significant role. By conducting awareness programmes, public seminars, panel discussions, research conferences, the awareness of the innovative ideas and programmes could be improved. In this way other organizational supports could be obtainable. For improving innovative culture in the university, administrators should find various supports even from organizations outside. Periodical training programs and workshops could be arranged to improve the competence and skills of the non academic staff.

In conclusion she explained that there is no difference between managerial innovation in universities and other public sector organizational innovations. Universities are good places where innovation is possible and already happening within it. Much of innovative activities and ideas were implemented without extra financial resources. Innovation in the university administration means introducing and implementing systems of management which are different from the existing practices and systems to improve efficient and effective degree programs. Therefore improving the quality and relevance of the educational programs are prime benefits of the university administration in Sri Lanka. The administrators' motivation to achieve is the significant determinant of the managerial innovation in the university administration. The supportive environment, support of the external environment and competent and skillful human resources are other determinants. The highlighted policy measures are essential to improve innovative behavior in the state university administration in Sri Lanka.
ORAL PRESENTATIONS
Strategy for Winning Medals at Elite Competitions in Athletics for Sri Lanka

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Abstract—This paper is a critical evaluation concerning numerous aspects of elite level athletics in Sri Lanka. It is focused on identifying a strategy for the development of athletics by adapting the existing systems that have led other nations to win medals. The literature shows that this subject is a global sporting arms race, where a country has to do something remarkably special to yield success. In this paper, the SPLISS Model which is a conceptual framework that can be used for comparison of elite sports policies will be presented. The nine ‘pillars’ of the model determine the gaps in scientific research on the relationship between elite sport policies and international sporting success. The method for data collection was qualitative interviews and the questions were highly structured to serve for a deeper exploration of the underlying issues behind the phenomenon. The data has been synthesized to provide an easy understandable analysis and displayed in the form of SWOT, to reflect and include a comparison within and in between interviews and combine separate descriptions to formulate a coherent interpretation. Sri Lanka could consider Asian Games Medals as the measure of success. A Sri Lankan version of the Long Term Athlete Development Model of Canada which is designed and developed combining the best research findings of latest sports science and best practices from around the world is recommended for all schools and universities in Sri Lanka, in order to produce athletes who reach their full potential.

Keywords — Athletics, Elite, SPLISS Model

I. INTRODUCTION

Sri Lanka is a country with a rich civilization, which can look back on a long and glorious tradition in athletics. It has taken part in all the Summer Olympic Games, London 1948 through London 2012, with the sole exception of Montreal 1976 edition, but appears to be underperforming at international elite competitions. Sri Lanka has won two medals - silver in 400m Hurdles by Duncan White in London 1948 and silver in 200m by Susanthika Jayasinghe in Sydney 2000 but failed to produce even a finalist at any ‘Track and Field’ event at Athens 2004, Beijing 2008 and London 2012.

Lack of an effective framework for sustainable development of elite athletes appears to be the cause for Sri Lankans not reaching the Olympic Podium despite existence of a good sports development programme well executed across the island nation through schools and clubs and funded by the Government of Sri Lanka.

II. LITERATURE REVIEW

In order to identify strategic changes that need to be introduced in Sri Lanka to achieve sustainable performance at elite level, the required material for formulating and developing the research was found in already published material. By contrast, a prospective literature research for pertinent information on the topic of elite sports within Sri Lanka has been depressing.

Identifying the composite and learned variety of factors that lead to success is a challenge, which resulted in an emerging interest in elite sports systems, the desire to explain the success and to examine why some nations perform better than others in international competitions. This raised some important questions and the researchers around the globe investigating the phenomenon is growing daily.
They all point out one essential finding - nations need to be aware of the fact that sporting ambitions cannot be met on a long-term basis except with a systematic and strategic approach, which requires the need to gain a deeper understanding of the elite sports development in different countries, pointing out the successful ones.

Findings of these studies reveal that availability of finance is a necessary condition. Hogan & Norton (2000) even found a linear relationship between money spent and medals won by Australia since 1980. However, it needs to be emphasized that the financial investment is not a sufficient condition. There is a growing body of research explaining that success can be produced by investing strategically and prioritizing the investments.

Although it would be impossible to create one single model that would explain international success, it became clear that many researchers and policy makers around the world are addressing this problem from the same perspective. This has resulted in an increasingly homogenous elite sports development system that is ostensibly based around a near uniform model of elite sports development with suitable local variations.

Over the last couple of decades, the macro-level factors (economic welfare, geographic position, climate, population size, religion etc.) influencing international success have been the most discussed ones in the studies on the Olympic Movement. The aim of these studies was to focus on the organizational context of nations that are largely based on economic variables: Gross National Product of a nation, or the political system, the degree of urbanization and so on (Kivioaho & Makela, 1978; Johnson & Ali, 2002).

The micro level-studies focus on genetic qualities and the athletes close environment influences (family, coach, friends, personal dedication, motivation etc.) which led to the success. In between the macro and the micro levels, there is the middle level, which is called the meso-level. The factors of this level are determined by sports policies and politics. If we take into account all the elements that determine elite sports success, these are the only ones that can be directly influenced and changed through policy and management and a considerable amount of research has been done in this area (Clumpner, 1994; Green & Houlihan, 2005).

Competition between nations has always been a feature of the Olympic Games. Politicians and the media continue to compare international success, despite the International Olympic Committee’s (IOC) protestation that the Olympic medal table is not an order of merit. As a consequence of the continuous escalating standards in international sport, competition has become a competition between ‘systems’ (Heinila, 1982).

The recent studies carried out in the United Kingdom (UK) - a Meta-evaluation of the Legacies of the Games the objectives of which include ascertaining why Great Britain was so successful at the elite level reveals that on elite sport the majority of activity had been led by UK Sport, the body responsible for supporting elite athletes which is a change in policy from the old system.

The impact of its 2012-related activities, most of which are ongoing core activities, which have been modified in scale because of the London 2012 Games, included Mission 2012, Team 2012, Pitch2 Podium and Elite Coaching Apprenticeships, illustrates the necessity for commitment to boosting elite sport.

Going forward, the focus of the meta-evaluation was on assessing the impact of additional investments in elite sport linked to the Games, and other catalytic effects, in terms of helping to maintain and exceed the Beijing benchmark in the short-term, and as a step on the road to build a sustainable elite sporting system longer-term.

In Australia, a National Elite Sport Council (NESC) had been established for this very purpose. NESC, in its role as the national coordinating group, is committed to fostering enhanced collaboration and coordination among the Australian Institute of Sports, state institutes and academies of sport. An integral component of this programme is a continued commitment to ensure that Australia remains at the forefront of high performance sport development.

The Long Term Athlete Development (LTAD) Model developed in Canada (Balyi, 2001) highlights the stages for the development of elite athletes. It is a framework for an optimal training, competition
and recovery schedule for each stage of athletic development. The principles of this research have been adopted by Athletics Canada as the framework for the proper management of youth and adolescent growth and development processes and identify critical periods of accelerated adaptation to training.

The United States (US) Olympic Committee (2001) surveyed US Olympic athletes from 1988 to 1996 and concluded that it took between 10 and 13 years of training just to make the Olympic team and between 13 and 15 years for those athletes who won a medal. It concludes that though the intensity required at the outset of the athlete development continuum is not the same as the intensity required at the end, the common thread among all stages of development is the coach.

Another study is a paper by Mick Green and Ben Oakley (2001) which explores the question of “Elite Sport Development Systems and Playing to Win: Uniformity and Diversity in International Approaches”. This study points out the similarities in approach and that they helped to form a basis leading to the development of the efficiency of different systems.

However, the key text identified is, “The Global Sporting Arms Race: An international Comparative Study on Sports Policy Factors Leading to International Sporting Success”, the SPLISS by Veerle De Bosscher, Jerry Bingham, Simon Shibli, Maarten van Bottenburg and Paul de Knop. It compares and analyzes sports structures, elite sports policy and performance in six different nations (Canada, Belgium, UK, Italy, Norway and the Netherlands) and aims to provide a better understanding of the factors which lead to international sporting success.

All of the analyzed literature follows a premise that performance in top-level sports is a mixture of all of the classified factors (genetics, environmental and physical circumstances in which people live), and the sporting systems are a product of a specific socio-cultural, economic and political background, which needs to be taken into consideration when analyzing the elite sporting system of a country.

The ‘Input’ represents the financial resources - the expenditure on elite sport, the ‘Throughput’ represents the efficiency of sport policies - the best way the inputs can be managed in order to produce the desired results, while the ‘Outputs’ represents the success, which is ordinarily measured by medals won in relevant competitions. There is a distinction between ‘Outputs’ (short term results of the operation of the system) and ‘Outcomes’ (more fundamental long term results/ impacts).

It is apparent that the specificity of the problem makes it impossible to ‘copy - paste’ the system that led to a success in one nation and make it work in another. This is important as the findings of the research will help the National Federation (NF) of Athletics to determine the key matters that should be focused on in order to develop an effective elite sport policy and understand the future investments we should concentrate on.

III. THEORETICAL FRAMEWORK

The theoretical framework that suited the research was the SPLISS model (Figure 1).

![Figure 1- SPLISS Model: 9 Pillars of Sports Policy Factors Influencing International Success](image)

The authors of the SPLISS international comparative study endeavoured to explain the relationship between elite sports policies, international sporting success and to benchmark their nation against competitors.

The literature review shows that this subject is a global sporting arms race, where a country or specific organization has to do something remarkably special to yield success. Thus, this research will look at developing a Strategic Plan that will provide NF the competitive edge it covets.

By comparing the ‘Input’, ‘Throughput’ and ‘Output’ results of six different nations, the study attempts to explain the relationship and to determine a
context within which an effective system can be developed.

Therefore, the findings of the SPLISS study (with suitable local variations of the nine pillars that may be specific in a Sri Lankan context), will help the NF of Athletics in Sri Lanka to develop the Strategic Plan which will be the best pathway to international sporting success.

The main focus will be to have views of all key stakeholders from different perspectives. Thus, a mixture of methods has been applied; document analysis, statistics, qualitative interviews and focus groups in order to collect a comprehensive volume of information.

As reasoning derived data leads to generalization, this involved an inductive, theory testing approach based upon a thorough and information-rich review of the principle sources in the existing literature, followed by data collection and analysis.

Although the approach adopted in this research was meant to be predominantly descriptive, the attempt was to move beyond the descriptive level to the subsequent analysis of all the contextual meso-level factors that affect the elite sporting structure and which are in direct correlation with the success or the lack of success.

The ‘Nine Pillar’ Analytical Model derived from the “SPLISS study of sport policy factors that lead to international sporting success” provided the basis for the research protocol and its simplified analytical framework with minor changes specific to Sri Lanka’s context. The interview protocol was developed around 9 main themes that have been previously identified in the literature.

It provided a comprehensive assessment of the NF of Athletics in Sri Lanka and teased out the experts critical opinion concerning the diverse aspects of overall sports policy with particular focus on the 9 pillar factors that make the most significant contribution to the sporting success and their main strengths and weaknesses, opportunities and threats (SWOT), as well as the suggestions for their improvement.

The questions were highly structured, determined before the interview and served for a deeper exploration, understanding of the underlying issues behind the phenomenon in question. All interviews were recorded with consent and subsequently transcribed either totally or partially.

The interviewees comprised of personalities from the Ministry of Sports, Ministry of Higher Education, National Olympic Committee (NOC) and NF of Athletics as well as Olympians, administrators, coaches, technical officials and past athletes who have contributed towards athletics.

IV. CONCLUSIONS & RECOMMENDATIONS

This research recommends numerous aspects that need to be projected under each pillar to achieve sustainable development in order for Sri Lankan athletes to be successful at elite competitions.

Also, it extends the knowledge about the NF of Athletics and immensely help to clarify the understanding about the position and shortcomings that the NF is confronted with by illustrating the major aspects displayed in the form of SWOT analysis.

**Pillar 1 - Financial Support**

The results of the analysis proved that there is sufficient financial support and commitment from the Government of Sri Lanka for sustainable development of athletics at elite level. The general revenue includes several sources of income among which the most important are the government, sponsors, the International Federation and marketing.

However, it is important to note that whilst the availability of finance may be a necessary condition for success, it will no longer be a sufficient condition to succeed at elite level. The latter will be influenced by the methods used to invest the money. “More money in equals more medals out” is no longer true (De Bosscher & De Knop, 2009).

However, it is of vital importance for the NF of Athletics in Sri Lanka to focus on their ability to attract enhanced financial income through marketing and to work in close liaison with the IOC and the International Athletics Association of Federation (IAAF) in order to secure enhanced berths in the sponsored programmes for athletes, coaches and Technical Officials (TOs).

**Pillar 2 - Integrated Approach to Policy Development**

The NF of Athletics is backed by an unique administrative structure spread across the country.
It boosts efficient administration which effectively contributes towards the development of athletics in Sri Lanka. Furthermore, athletics is gifted with an acceptable policy development process as well.

The primary responsibility towards the development of sports lies with the Ministry of Sports and the ardent desire of the government to uplift athletics is very much evident from the pivotal contributions made to develop the infrastructure facilities especially since the end of the 30-year humanitarian operation in 2009.

With the existing stable political situation, Sri Lanka could do well in the development of athletics, provided that the NF keeps on enhancing coordination with the Ministries of Education and Higher Education in order to ensure a continuous influx of the cream of athletes through proper coordination of their development to elite level.

**Pillar 3 - Foundation and Participation in Sport**

The two vital facts that have been considered under this pillar are the number of registered athletes which is in the region of 75,000 and the clubs and associations affiliated to the NF which represents the schools, universities, private and state sectors, armed forces and all 25 administrative districts, totalling to 39.

The country is blessed with a free education system that affords 9 years of compulsory schooling for every child, in over 1000 schools evenly spread to cover all parts of the country. Further, a rich tradition of Inter-House Athletics competitions conducted annually with the active participation of parents is an impetus.

This platform provides a wide basis at foundation level supported by regular competitions from Under 9 to Under 23, organized by the NF of Athletics and Sri Lanka Schools Athletics Association. Further, it is mandatory for all schoolchildren to follow sport as a core subject for GCE (O/L) Examination.

**Pillar 4 - Talent Identification and Development System**

The positive and negative trends on this pillar suggests that in the ever increasing competitive environment, the influence that could be made by talent identification and development is undisputed and thus it is of vital importance for sustaining long-term international competitiveness.

Further, the interviewees rated talent identification and development as one of the most important pillars that needs to be improved, when asked of their priority, if they would have additional funds at their disposal towards utilization for development of athletics in Sri Lanka.

However, the need of the hour is to replace the existing visual based talent identification system with a scientifically proven system, with a systematic and strategic approach towards talent identification and development, as Sri Lanka seems to be under performing in this pillar with the ever increasing competitiveness.

**Pillar 5 - Athletic and Post Career Support**

It has now been recognized that professional planning and education during the sports career, significantly helps the athlete during and after their career. However, the government or the NF of Athletics have no specific programmes in place for elite athletes but endeavour to facilitate the transition by finding employment.

Though there is no general policy at the national level, the experience demonstrates that the schooling system is in most cases, supporting the elite athletes by adapting the school programme to their needs. Besides, the elite athletes who join the Armed Forces are benefitted through optimum facilities, along with a monthly salary and pension benefits.

Although, post career programmes have not been developed in Sri Lanka, it seems that athletes regardless of the inadequate compensation during their athletic career, do have an interest in pursuing athletics as coaches, administrators or TOs or to work with youth mainly because of their love towards their sport.

**Pillar 6 - Training Facilities**

There is a network of training facilities throughout the country and the athletes as well as coaches have commented that the facilities available in the country are adequate for elite athlete training. Also, over the years, the elite athletes have been afforded priority access to these facilities and other privileges.

The decision by the government to develop infrastructure at national level is commendable and praised by the stakeholders. The state-of-art training facilities being constructed in all nine...
provinces and extending the provision of adequate training facilities up to grass root level, has won the admiration of all interviewees.

**Pillar 7 - Coaching Provision and Coach Development**

In Sri Lanka, there is a reasonable number of experienced coaches but all of them are volunteers. Amongst them, 240 are IAAF qualified yet they do not get adequate opportunities to develop their coaching skills to become world class elite coaches. This is a pillar where Sri Lanka is considerably weak in terms of professionalism.

Our coaches serve athletics through the attachment they have towards the sport and most of them are former elite athletes. Yet, they lack professional exposure to advanced technologies, opportunities to learn the latest trends, facilities to improve computer literacy and working knowledge in English.

**Pillar 8 - (Inter) national Competition**

The NF of Athletics in Sri Lanka conduct the National Championships annually. Further, athletes have sufficient opportunities to take part in international competitions. The country has hosted many international competitions to the entire satisfaction of the international fraternity and won the admiration of all stakeholders.

Apart from the economic and cultural benefits, hosting major international competitions is considered one of the most important factors in the overall development of the athletes pursuing excellence, as ‘home advantage’ afford the athletes to measure themselves against elite athletes and showcase their abilities.

**Pillar 9 - Scientific Research**

This is the most negative pillar in the Sri Lankan scenario, as the elite athlete development is not supported at all by scientific research at any level. In fact, recent trends in many countries, to increase the investment in scientific research, suggest that the sporting environment recognizes the importance and benefits that could be derived through scientific research.

It is evident that in order to change the current scenario it would be necessary to enhance the link between the NF of Athletics and the universities and seek to promote applied research in sport. Since scientific research is of vital importance for the development of sports, Sri Lanka needs to embark on a programme to avail itself of the existing facilities.

**How to benchmark with elite Athletes Development Strategies used by other successful countries?**

Winning medals on the international sporting stage is incredibly tough and the margins between success and failure become smaller as the years roll by and as countries strive for glory. In order to ensure that Sri Lanka’s most talented athletes have every chance of realizing their potential, it is recommended to introduce a Sri Lankan version of the World Class Performance Programme (WCPP) which was meticulously utilized by Great Britain to achieve optimum results at London 2012 Olympic Games.

The WCPP’s, ‘Podium’ styled programme of supporting athletes with realistic medal winning capabilities within an Olympic cycle, could be a short-term goal for Sri Lanka. Other distinct levels, ‘Development’ and ‘Talent’ mainly designed for athletes demonstrating the ability to be competitive in a period of time and athletes who have the potential to progress through the world class pathway, could be long-term perspectives.

**What strategic changes need to be introduced to achieve sustainable performance at elite level in athletics in Sri Lanka?**

Taking the traffic light summary as the yardstick, a determined strategic approach need to be adopted by the NF of Athletics in Sri Lanka, to improve on the Pillar 9 (Scientific research) which blinks ‘Red’, along with Pillar 4 (Talent identification and development systems) and Pillar 7 (Coaching provision and coach development) that blinks ‘Yellow’, to make them ‘Green’.

In order to develop a systematic and strategic approach in a Sri Lankan context to achieve sustainable performance at elite level, the NF of Athletics should strive to boost up all 9 pillars of the SPLISS model and make them ‘More Greener’, by optimum utilization of the available financial and other resources such as the immense volume of volunteers who continue to contribute towards development of athletics in Sri Lanka.

The first and foremost need for the NF of Athletics in Sri Lanka would be to create a ‘Strategic Plan’ for a 2-year period for the duration 2014 - 2016. The
planning process should be comprehensive and should include a discussion of the operating environment, the role of vision, mission and objectives as well as developing plans to meet the objectives. The ‘Strategic Plan’ once drawn up with the active participation of all stakeholders, could be a unifying tool for management and internal communication.

In this regard, the ‘Strategic Plan’ developed by the NESC of Australia in 1993 would be of vital importance to benchmark the high performance level to be achieved by Sri Lanka. The strategies developed under the five ‘Key Result Areas’ of Effective National Network, Leadership, World’s Best Practice, Strategic Partnership and International Perspective, could be of significance. The NESC network is collectively responsible for the provision of daily training and a high performance, sport-servicing environment to elite athletes.

Introduction of a ‘Strategic Plan’ will involve significant financial commitment mainly from the government. The NF of Athletics has succeeded in meeting this challenge upto now but will have to ensure that the required funding is forthcoming without any interruption. In this regard the policy adopted by the New Zealand Olympic Committee to fund only 6 sports that have the ability to produce athletes who will finish in the top 16 is ideally suited for implementation in Sri Lanka.

Sri Lanka has succeeded in winning a total of 27 medals which include 10 Gold, 6 Silver and 11 Bronze Medals at the Asian Games. During the last 25 years Sri Lanka has reached the Asian Games podium only in the sprint events of 100m, 200m, 400m (both Men and Women), 100m Hurdles (Women) and 4 x 400m Relay (Men). Accordingly, these events could be identified as amongst the high potential medal winning events for Sri Lanka.

It is recommended that Sri Lanka Athletics consider Asian Games Medals as the measure of success particularly considering the size of the likely medal haul in a very successful Olympic Games for a country like Sri Lanka. One of the possible ‘short cuts’ to achieve short-term success is through ‘cross sport’ talent identification and development. Here, the time required to reach elite level may have been accumulated in another sport and this was successfully utilized by Great Britain in London 2012 Olympic Games.

In the face of remarkable human resources and infrastructure facilities available in Sri Lanka, to the advantage of athletics and the extremely committed coaches, TOs and administrators, it is not surprising to see why Athletics remains one of the most popular sports disciplines in Sri Lanka and if she would properly concentrate on the proposed 9 Pillars of the SPLISS Model, Sri Lanka could certainly count on improved success at elite level in the most important Olympic Sport of Athletics.

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A Customer Relationship Management System for the MICE industry in Sri Lanka – “MICESL”

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Abstract— A significant segment of the Tourism industry is MICE Tourism, which refers to Meetings, Incentives, Conventions and Exhibitions. MICE Tourism entices revenue to the host country. However, the Sri Lankan MICE industry is unable to accumulate the total revenue from MICE activities, resulting in a negative impact to the growth of the country. Therefore, the research focus was on the impact of Sri Lankan service industry and destination image on MICE Tourism. As a result, a literature survey, web-based questionnaires and semi-structured interviews was conducted to analyse the problem domain in the industrial expert’s viewpoint. A sample of 100 was used to conduct this survey. Based on the survey the key findings of this research was that Sri Lanka has established plans to improve the infrastructure of the country to attract and accommodate more MICE tourists. However, the image of Sri Lanka is not well developed and the service quality of the hospitality and transport industry plays a major role in the MICE tourist perception of the country. Thus, based on the findings of the research it was considered to develop functional online collaboration platform as a website between organizations, hospitality and transport industry of Sri Lanka for attraction of MICE tourists.

Keywords— Customer Relationship Management, Customer Satisfaction, Destination Image, MICE industry, Service Quality

I. INTRODUCTION

In Sri Lanka, the Tourism Industry is a fast growing industry that has recorded US $ 1.8 billion revenue in the year 2013 (Sirimane, 2014). The industry has continued to diversify and grow over the past few years. Mendis (2013) states that the industry is promoting Sri Lanka’s other prospects to the travel tourism, particularly, event tourism.

Event Tourism is a methodical planning, development and marketing of events. The strategy is to focus on a market segment that consists of those who travel to events, or who can be motivated to attend events, or who can be motivated to attend events while been away from home (Lau, 2009). Events can be categorized into different categories based on their form and content. They are, Cultural events, Sporting events and Business events (Lau, 2009). Business events are “increasing its popularity every day, and in some cases it becomes the main type of tourism in the destination” (Gurkina, 2010, p.1) and MICE Tourism has become a main focus in many countries that represents a sector of tourism that is of business events and activities.

MICE Tourism is a rewarding business that has shown a steady growth over the past few years in Sri Lanka. “MICE tourists represent the ‘up-market’ calibre of tourists spending three to four times a year more than an average holiday maker” (Mendis, 2013). The motive of tourists who travel to attend MICE occasions is beyond leisure tourism.

The MICE Industry is considered to play a great role with the country’s economy. It also enhances several additional industries, such as, hospitality, transport, and insurance. In addition, this segment contributes towards the reinforcement of the local trade; creation of employment possibilities and development of improved infrastructure.

It has been identified that experience is a new source of value to the customer. They seek not only for a “good quality product or service, but for the outstanding and unique experience which will last for a life time. Usually people tend to look for the experience in the service oriented sectors” (Gurkina, 2010, p.8) Therefore as tourism is a service oriented industry, tourists who travel on business purposes look for experiences that will be
different however memorable. “Although experiences are intangible, people will desire to get them, due to the reason that those things and memories stay with them through their lives.” (Gurkina, 2010, p.1) Therefore, industries are required to improve tourist expectation, to build a creative image of the country and industry, “attract more customers, and working on their satisfaction and loyalty.” (Gurkina, 2010, p.1)

A. Research Aim

The main aim of the of this research is to identify the barriers to the performance of MICE Tourism, the service factors that affect the related industries and the impact of MICE Tourism on Sri Lankan Tourism Industry, in-order to design, develop and evaluate a business solution supported by an information systems (IS) solution, to promote Sri Lankan MICE Tourism Industry.

The research attempts to study the following:

- The performance of MICE Tourism and its effect to the Tourism Industry and country’s development.
- Contribution of hospitality and transport industries to MICE Tourism.
- The effect of destination image on MICE Tourism.

II. LITERATURE REVIEW

In early days, the main focus on meetings was discussions on common interests. However, due to industrialization, the requirement for business meetings increased rapidly. Yet with the expansion of the government organizations, an increase in multi-national organizations, development in professional groups, need for management training and continuing professional development and the development of subject specialization, generated a need for MICE industry to begin (Lau, 2009).

MICE tourism is a fast growing segment, in which North America and Europe are leaders in the world exhibition and convention market. However, Asia is a strong growing region since the 1960s and accounts for more 39% of business trips and takes in 48% of business travellers (Lau, 2009). Therefore, this industry is business oriented, which involves mandatory travel. It is evident that the attendance to MICE occasions of these tourists, involve the industries such as tourism and hospitality.

1) Reasons to have MICE Tourism in Sri Lanka: Many authors and reports state that Sri Lanka has a variety of locations in which meetings, incentives, conferences and exhibitions can be held. Jayasuriya (2013), states that Sri Lanka is a favoured “destination for incentive tours for many multinational companies.” However, as a country, Sri Lanka needs to invest on infrastructure development in the hospitality and transport industries, in-order to improve on MICE tourism.

B. Tourist’s Expectations

Tourist expectation is an important factor considered since it can influence the tourist’s decision making process and awareness of the destination. Therefore, the service sector of a country can play a major role to adjust customer “perceptions to their expectations in order to justify their beliefs or predictions, thus removing their psychological conflicts” (Bosque, 2008, p.139). There are three main factors that influence a tourist expectation. They are;

- Past Experience
- Word of Mouth Communication
- Predetermined image of a tourist destination

C. Service Quality

A sector that is positioned to benefit directly from the anticipated boom in tourism is the Sri Lankan Hotel Industry” (Illangasekera and Weeralingam, 2011). When considering the industrial structure, the hospitality industry consists of many hotels and other establishments such as guest houses and inns that have been approved by the SLTDA. The 2012 annual report submitted by the Central Bank of Sri Lanka, states that hotels and restaurants in Sri Lanka have shown a growth of 22.3% in the year 2013 when compared with the growth rate of 20.2% in the year 2012 (Central Bank Sri Lanka, 2013).

In order to have a competitive advantage, hotels are turning towards performance measurement and management (Wadango et al., 2010). Therefore, every hotel aims at customer satisfaction by enhancing the value of its product and services in which “the overall process by which consumers assess the quality of a service or product is considered to be very complicated” (Singh and Grover et al., 2007, p.1724).
According to Kotler, a service can be defined as “any act or performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything” (Singh and Grover et al., 2007, p.1724). The “overall process by which consumers assess the quality of a service or product is considered to be very complicated” (Singh and Grover et al., 2007, p.1724). The quality of service is an important factor for a successful business. “In hotel industry, service quality, as an extremely subjective category, is crucial to the satisfaction of the client. It is therefore imperative for managers in hotel industry to apply the SERVQUAL model for the measurement of service quality in their own hotel company, in order to satisfy the guest’s expectations and ensure a position on the growing global tourist market” (Gržinić, 2007, p.95).

III. RESEARCH QUESTION

What is the connection if any between service quality, destination image and customer satisfaction of tourists as applicable in the context of Sri Lankan MICE Tourism?

IV. THEORETICAL FRAMEWORK

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Customer Satisfaction</th>
</tr>
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<tbody>
<tr>
<td>Service Quality</td>
<td>Destination Image</td>
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Table 1-Dimensions of Independent Variables

The theoretical framework relates to the “philosophical basis on which the research takes place” and it contains “implications for every decision made in the research process” (McCann, 2006). Philosophies relating to a wide range of tangibility, reliability, responsiveness, assurance and empathy factors and destination image influencing tourist expectations were studied. The theoretical framework of this research is as follows.

Destination image is a “real service expectation communicator.” When considering the high levels of ambiguity, tourists consider their fixed “images as a signal of the true capabilities” of the destination. Bosque et al. (2006) states that earlier studies have shown a positive relationship between destination image and service industries such as, hospitality, travel agencies and financial services. “In tourism, destination image is a mental representation of the place that helps individuals to anticipate their destination experiences. Therefore, image moulds the expectations that individuals have of a tourist destination before the visit. The more favourable the preconceived image of a destination, the higher the tourist expectations.” (Bosque et al. 2008, p.141)

Chingang Nde and Lukong (2010), states that “services are mostly described as ‘intangible’ and their output viewed as an activity rather than a tangible object which is not clear because some service outputs have some substantial tangible components like physical facilities, equipment and personnel.” “A service design which details a service, service system and the service delivery process must consider customers, staff, technology, the physical environment, and the consumption goods. In summary, it is eminent for service firms to consider the physical aspects of quality in order to offer high service quality.”

Customer satisfaction can be defined in terms, of customer loyalty, customer relationship within an organization. Customer satisfaction is highly important in the service industry since it decides the customers’ future behaviour. (Gurkina, 2013)

“A firm in order to compete successfully must have an understanding of consumer perception of the quality and the way service quality is influenced.” (Seth, Deshmukh and Vrat, 2005, p. 915) In a service industry it is difficult to measure quality because it is intangible and subjective. Irrespective the diversity of service settings, “there is a core of concepts widely accepted as intrinsic to services. The recognition of intangibility has brought up the recognition that service quality perceptions result from a comparison of customer expectations with service performance.” (Senge and Oliva, 1993, p. 481)

V. CONCEPTUAL MODEL

Theory confirms that service quality factors and destination image illustrated in Figure 1 influences tourist expectations. This study further discus on the applicability of tourist expectation related to MICE Tourism and its performance.
A. Hypothesis Developed
The identification of the independent variables are insufficient, in order to respond to the research question. Hence, it is essential that the identified variables along with their indicators are tested to conclude if they have a positive or negative result on MICE Tourists. In order to evaluate the independent variables two hypothesis were developed.

B. Formulated Hypothesis (H)

H1 – Perceived service quality positively influences customer satisfaction of tourists in Sri Lankan MICE Tourism

H2 – Perceived destination image positively influences customer satisfaction of tourists in Sri Lankan MICE Tourism

C. Research Plan
The study follows the inductive research approach as the research methodology for the project. The inductive approach moves from a specific observation to a broader generalization, also known as the ‘bottom up’ approach. The main research is based on identifying the barriers to MICE tourism. Therefore, it is required to find the factors, which are the key causes for the identified problems. When the factors are identified, is when a business solution can be proposed, which leads to the reason that the deductive method was not chosen.

VI. DATA ANALYSIS AND FINDINGS

A. Data Gathering Techniques
According to the accuracy, ease of study, time, lack of error and applicability to the project several techniques were selected in order to gather quantitative and qualitative data for the research. The techniques selected are,

- Quantitative
  - Pencil Based Questionnaires
  - Web Based Questionnaires
- Qualitative
  - Observation
  - Telephone Interviews
  - Face to Face Interviews

B. Sampling Methods
In order to analyse the data gather via questionnaires convenience sampling where, the questionnaire was emailed to personnel belonging to the hotel industry, transport industry and airline services and snow ball sampling where, recommendations from top end personal of Foreign affairs was used in order to reach more organizations and hotels. Judgement Sampling were used for interviews conducted because, the interviews involved, top end personnel in the industry, representing many organizations and the government.

C. Analysis
The rate of responses have been carried out according to the below formula;

\[
\frac{\text{Number of Completed Surveys}}{\text{Number of Surveys given out}} \times 100
\]

Post the completion of data collection a couple statistical tools were selected to analyse collected responses as well as test the conceptual model that has been formulated together with 2 hypothesis that examine the relationship between 4 paradigms. Therefore, structural equation modelling was selected as the suitable technique for testing the model. Table 3 shows the correlation of the perceived and expected customer satisfaction in terms of service quality and destination image.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measure</th>
<th>Correlation</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Quality</td>
<td>Tangibility</td>
<td>0.67</td>
<td>0.83</td>
</tr>
<tr>
<td></td>
<td>Reliability</td>
<td>0.82</td>
<td>0.87</td>
</tr>
<tr>
<td></td>
<td>Responsiveness</td>
<td>0.78</td>
<td>0.90</td>
</tr>
<tr>
<td></td>
<td>Assurance</td>
<td>0.85</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Table 2-results for factors generating customer satisfaction
The scale measuring service quality and destination image was a 5 pointer Likert scale. These measures allowed an affective evaluation of both variables made it possible to capture the image of both tourists and the industrial personnel.

The data gathered through the analysis phase was fed into the PSPP system in order to prove the hypothesis formulated. The following shows the correlation between service quality and its dimensions.

- Tangibility and service quality has a correlation of 0.67
- Reliability and service quality has a correlation of 0.82
- Responsiveness and service quality has a correlation of 0.78
- Assurance and service quality has a correlation of 0.85
- Empathy and service quality has a correlation of 0.82

Therefore the results above show that the service quality dimensions have been implemented by the hospitality and transport industry. Furthermore there is a 0.89 correlation between service quality and customer satisfaction.

The following shows the correlation between destination image and its dimensions.

- Infrastructure and Destination image has a correlation of 0.75
- Socio Economic Environment and Destination image has a correlation of 0.62
- Natural Environment and Destination image has a correlation of 0.56
- Cultural Environment and Destination image has a correlation of 0.39
- Atmosphere and Destination image has a correlation of 0.63

There are several positive relationships between the two variables, where service quality contributes to 69% of customer satisfaction and destination image contributes to 31%.

Therefore the results above show a positive relationship between destination and its dimensions. Destination image and Customer Satisfaction has a correlation of 0.70. Therefore the following formulated hypotheses were proven.

- Perceived service quality positively influences customer satisfaction of tourists in Sri Lankan MICE Tourism
- Perceived destination image positively influences customer satisfaction of tourists in Sri Lankan MICE Tourism

With the above hypotheses proved, it has been identified that there is a strong connection between service quality, destination image and customer satisfaction. Therefore, above evaluation and data analysis responses the research question.

D. Findings of Analysis

Accordingly, it is identified that the hospitality, and transport industry can play a major role in customer satisfaction of a MICE Tourists because the involvement with MCIE tourists is often. The findings of the research is categorized into two main sections, service quality and destination image.

1) Overall customer satisfaction: The overall customer satisfaction level of MICE Tourists is highly dependent on two factors service quality of the hospitality and transport industry and destination image of which both hypothesis was proved to have a positive impact. The overall customer satisfaction and its relationship between the two variables of which service quality contributes to 69% of customer satisfaction and destination image contributes to 31%.

VII. PROPOSED SOLUTION

The proposed solution is a common platform which is intended to bring revenue to Sri Lanka and to promote Sri Lankan MICE tourism by joining forces of different industries together. In addition, it provides details for MICE tourists to explore Sri Lanka during their visit.
IX. CONCLUSION

In conclusion, it should be noted that the main issues of MICE industry in Sri Lanka were service quality and destination image. This could be overcome by addressing the problem to the industries and enabling them to solve their problems and in addition the invention of the virtual framework that will help organizations and industry to build public image thereby, building the destination image. From the perspective of Tourist Board, it is a valuable opportunity for the industries to perform their tasks to assist the growth of the MICE industry.

With the relevant literature the author was able to identify the solution to the encountered problem. However, the feasibility of the solution was a great concern in the industries viewpoint.

X. RECOMMENDATIONS

Based on the project carried out the author decided to address some recommendations as further enhancement of the project.

- Tourist Board of Sri Lanka could be the initiative to promote MICESL website as a better market place to gain users. It will enhance the credibility of the source and have stakeholder acceptance.
- It is a value addition to provide industries with assist in service quality of the market place.
- The country has to improve the coordination between all the stakeholders involved in business tourism, both public and private ones.

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The encouragement and assistance given to me by colleagues at IIT and Mr. Ken de Joodt are also sincerely remembered. I take this opportunity to thank each and every one of them for helping me to make the project a success.

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BIOGRAPHY OF AUTHORS

Gayanthi de Silva is a student of Informatics Institute of Technology, completed a degree in Bsc (Hons) Information Systems and Business Management.

Gayathri Ranasinghe is a lecture at Informatics Institute of Technology, who supervised the research project MICESL.
Abstract — Employee motivation is highly significant for the organizational productivity. Improved productivity in apparel manufacturing sector is considered as one of the key input for the development of Sri Lankan economy. Lower productivity targets achievement, having higher labour turnover rates and higher employee absenteeism rates more than the standard set levels and these are critical situations in Sri Lankan apparel manufacturing industry. Employees are regretting highly on their financial benefits and non financial benefits, which are provided by their organizations. This study was carried out on employee motivation and productivity improvement. Main question of this research was that, what the effort made by authority to improve productivity through a sound motivational mechanism in Sri Lankan apparel manufacturing industry? The aim was surveying the relationship between motivation and productivity, and on the other hand personal factors, organizational factors and interaction factors affecting on employee motivation. There were four objectives and research was based on four hypotheses. Research approach was deductive approach. Statistical population was entire apparel manufacturing organizations in Sri Lanka and the methodology has been questionnaire based survey, observational methods and interviewing techniques. Sample size was 500 and subjects selected were the apparel employees; top, middle and lower levels from ten large scale apparel manufacturing organizations located within Western province in Sri Lanka. Non random stratified convenient judgement sampling technique was applied. Reliability of data was checked by Cronbach’s alpha. The data were analysed using statistical methods of simple linear regression, correlation and multiple regressions with the SPSS.

There is a strong positive relationship between employee motivation and productivity, and also different personal factors; such as perception of behaviour, interest, needs as well as, different organizational factors; feedback, co-workers, task design, supervision and rewards significantly affect employee motivation, while attitudes and communication do not significantly affect on employee motivation in Sri Lankan apparel manufacturing sector. Further, there is an interaction between two key employment hierarchical levels; top level and middle, lower level for different personal factors and organizational factors. Ultimately, well planned rewarding strategy, positive feedback with praising for accomplishments, employee mentoring, training and development and concerning the psychological aspects are highly recommended to improve productivity through a sound motivational mechanism for Sri Lankan apparel manufacturing industry.

Keywords: Motivation, Sri Lankan apparel manufacturing industry, productivity

I. INTRODUCTION

The apparel manufacturing industry is one of the most significant sectors of the economy in terms of investment, revenue, trade and employment generation in all over the world. The important segments covered in apparel manufacturing industry in the world include kids’ clothing, men’s clothing, women’s clothing, bridal wear, men’s wedding wear and intimate apparel. The apparel export market is divided into two major categories; knit and woven. In the knit apparel export market, China is already ranked as the number one knit apparel exporter in the world with the market share of 39 % (The Sri Lankan Apparel, Garments without Guilt, 2010). Apparel industry is one of the most significant and dynamic contributors to the overall economy of Sri Lanka. Presently, Sri Lankan apparel manufacturing industry is facing number of deteriorating problems in the process of achieving...
goals and objectives related to productivity. According to the discussions with top and middle managerial levels and observations obtained from shop floor level, the major contributing factors for the lower level productivity are displayed in below figure 1.1.

Figure 1.1 Contributing factors to lower productivity in Sri Lankan apparel manufacturing sector

Due to; High Labour Turnover, High Employee Absenteeism, Poor Incentives, Inadequate Human Resource Development, Poor Working Conditions, Strained Employer-Employee Dialogue, Restrictive Labour Regulations, Lack of Professionalism in Industry

Sri Lankan apparel manufacturing sector has recorded the average labour turnover rates of around 55 % per annum with the highest rate of 60 % has being recorded in the factories which are located in the western province (Discussion Paper, South Asia Multi-disciplinary Advisory Team (SAAT), International Labour Organization, 2011). Monthly labour turnover rates in the apparel manufacturing factories located in different provinces are descriptively displayed in the below table 1.1. Employee absenteeism is another serious problem, which causes low organizational productivity. Monthly employee absenteeism rates of the apparel manufacturing sector in Sri Lanka are descriptively displayed according to the provinces throughout the country (Table 1.2).

Table 1.1 Monthly Labour Turnover rates of Sri Lankan apparel manufacturing sector

<table>
<thead>
<tr>
<th>Province</th>
<th>Monthly labour turnover rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western</td>
<td>5.9</td>
</tr>
<tr>
<td>Southern</td>
<td>3.1</td>
</tr>
<tr>
<td>Central</td>
<td>3.4</td>
</tr>
<tr>
<td>Eastern</td>
<td>7.2</td>
</tr>
<tr>
<td>North Western</td>
<td>5.2</td>
</tr>
<tr>
<td>North Central</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Table 1.2 Monthly Employee absenteeism rate of Sri Lankan apparel manufacturing sector

<table>
<thead>
<tr>
<th>Province</th>
<th>Monthly employee absenteeism rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western</td>
<td>8.5</td>
</tr>
<tr>
<td>Southern</td>
<td>5.3</td>
</tr>
<tr>
<td>Central</td>
<td>7.5</td>
</tr>
<tr>
<td>Eastern</td>
<td>8.1</td>
</tr>
<tr>
<td>North Western</td>
<td>6.5</td>
</tr>
<tr>
<td>North Central</td>
<td>3.4</td>
</tr>
<tr>
<td>Uva</td>
<td>6.4</td>
</tr>
<tr>
<td>Sabaragamuwa</td>
<td>1.4</td>
</tr>
<tr>
<td>Northern</td>
<td>12.0</td>
</tr>
<tr>
<td>All Island</td>
<td>7.4</td>
</tr>
</tbody>
</table>

Sources; Discussion paper, South Asia Multi-disciplinary Advisory team (SAAT), International Labour Organization, 2011

Further, Sri Lankan apparel manufacturing sector has a significant problem of inability of achieving productivity targets. According to the figures obtained from a large scale apparel manufacturing organization, throughout one of a whole apparel order for USA, the organizational productivity target achievement is descriptively displayed (Figure 1.2). The set goal is 1200 pieces per day and the produced level of organization was under the standared level. Therefore, the short-term goal was not achieved in this apparel manufacturing factory at least a one day in the production process.
Figure 1.2 Successfulness of the productivity goal achievement of a giant Sri Lankan apparel organization in 2010 with in a period of an order completion to USA
Source: Production Dairy, Organization 1, 2010

According to the above figures of production, it seems that, there is a serious problem of achieving the productivity targets throughout the production process. Why such a situation of poor productivity levels among Sri Lankan apparel manufacturing organizations? As well as, among the employees, the absenteeism rates and labour turnover rates are higher with comparison to the set standard levels of the industry. Then, after having few dialogues with the employees in both middle and shop floor hierarchical level of the organization, they are working in the organization with number of unsatisfied financial and non financial needs. Employees of the production category also are highly regretting on their salaries, incentives, promotion scheme, empowering and special trainings for them from the organization in both middle and small scale level apparel manufacturing organizations. According to the evidences displayed above with the statistics, why employee absenteeism rates, labour turnover rates are very high? And, why employees are not satisfied with their jobs? Why all most all of the employees including top, middle and shop floor levels are not motivated up to the desirable level? Because, the productivity improvement has become a rigorous task, it is highly essential to find out that, what is the existing relationship between employee motivation and organizational productivity?

II. LITERATURE REVIEW

Atkinson (1964) defined the motivation as the contemporary immediate influence on the direction, vigour and persistence of action. Five major approaches that have led to understanding of motivation are Maslow’s need-hierarchy theory, Herzberg’s two-factor theory, Vroom’s expectancy theory, Adams’ equity theory and Skinner’s reinforcement theory. Productivity is a measure of output from a production process, per unit of input (Courbois and Temple, 1975). It has been reported that job motivation is a main criteria and principle in human resource management (Ortiz and Tran, 2007). Moreover, one strategy for reaching ultimate goals and enlargement is the motivation (Alibakhsh, et al., 2010). When consider about the organizational productivity in the apparel manufacturing sector, Shanmugasundaram and Panchanatham (2011) in India launched their study in order to find out the factors affecting the productivity in apparel manufacturing exports units in India. According to the ranking study of various factors by the weighted method of Shanmugasundaram and Panchanatham in 2011, it was found that, employee absenteeism, labour turnover and the socio-economic background of the employees were significantly affecting on the labour productivity of the apparel manufacturing sector in India. Malik and et al in 2011 found that, there is a significant relationship among all factors; employee’s performance and motivation towards the organizational effectiveness. There is a positive and direct correlation between motivation and productivity among organization’s employees and being careful about fulfilling the motivation factors causes a considerable improvement (Alibakhsh, 2010). According to Ortiz and Tran (2007) interesting work, promotion and growth in the organization, personal loyalty to employees, good working conditions and tactful discipline are the key significant motivational factors for the employee motivational process. As well as, carefully designed reward systems that include job enlargement, job enrichment, promotions, internal and external stipends, monetary, and non-monetary compensation should be considered for the process of employee motivation (Lindner, 1998). According to Weerasinghe (2006) recognition, job security, social needs and supervisor characteristics strongly impact on employee motivation in private sector service organizations in Sri Lanka. And, it was found that, the absence of employee empowerment in Sri
Lankan apparel manufacturing sector is affecting adversely for the competitiveness and number of long-term implications is associated with this (Kapuge and Smith, 2007).

III. METHODOLOGY

A. Hypotheses of the study
H 1: Alternative hypothesis – There is a relationship between employee motivation and organizational productivity in Apparel Manufacturing Industry in Sri Lanka
H 0: Null hypothesis – There is no any relationship between employee motivation and organizational productivity in Apparel Manufacturing Industry in Sri Lanka
H 1: Alternative hypothesis – Different organizational factors significantly affect motivation
H 0: Null hypothesis – Different organizational factors do not significantly affect motivation

H 1: Alternative hypothesis – Different personal factors significantly affect motivation
H 0: Null hypothesis – Different personal factors do not significantly affect motivation

H 1: Alternative hypothesis – Different interaction factors significantly affect motivation
H 0: Null hypothesis – Different interaction factors do not significantly affect motivation

B. Objectives
Key objective:
To identify the effort made by authority to improve productivity through a sound motivational mechanism in Apparel Manufacturing Industry in Sri Lanka

Specific objectives:
To find out the relationship between employee motivation and productivity
To find out the factors affecting employee motivation
To find out the different existing employee motivational levels in various designation categories

C. Conceptualization

D. Selected methodology
Questionnaire based survey - The survey method was used for the collection of data in this study. Questionnaire based survey was conducted among employees of various hierarchical levels of selected apparel organizations such as top, middle and shop floor levels and under these levels various designations having employees under different employment categories; administrative, technical and operative were included.

Questionnaire handling - Questionnaire had five key parts. First part used to collect data on social and demographical status of employees. Second part used to measure the personal factors affecting on motivation. Third part used to measure organizational factors affecting on motivation. Then, fourth part used to measure employee motivation in Sri Lankan apparel manufacturing sector and opened only for top level employees of HR department except one question and it was opened for all. Finally, the part five used to measure the productivity of Sri Lankan apparel
manufacturing sector and opened only for top level employees of the production department.

Interviewing method - Existing employee motivational procedures were studied through an interviewing method. The nature of the interview was having both structured and non-structured appearances.

Observations - Observations were done with the frequency of twice a month throughout the research period. As well as, within the data collection time period from shop floor level employees of manufacturing floor, number of observations were made on the behaviours of the employees, team working behaviour of the group of employees, behaviours of the supervisors and the inter-relationship among co-workers and the supervisors. Observations were made on handling inquiries of subordinates by the counsellors and top level HR managers and executives of apparel organizations within the data collection period.

E. Sample of the study
The studied sample of this research was a representative sample of the entire apparel manufacturing sector in Sri Lanka. Number of subjects in the sample was 500 employees including top, middle, lower levels of different designation categories.

F. Population
The population of the study was entire apparel manufacturing organizations in Sri Lanka. There were around 830 apparel-manufacturing factories throughout the country and among them, 235 are large scale, 438 are medium scale and 157 were small scale (The Sri Lankan Apparel, Garments without Guilt, 2010). The total number of employees including top, middle and lower level of the entire apparel manufacturing sector was approximately 250,000 heads. Therefore, 250,000 number of heads were the total population of study.

G. Sampling Technique
Non random stratified convenient judgment sampling technique was applied.

III. DATA PRESENTATION

A. Status of overall motivation of the sample
Overall motivation of employees in different organizational hierarchical levels is shown in figure 4.1. Top level employees are motivated more higher than middle and lower level employees. Based on the scores of average level of motivation obtained through the questionnaire based survey, the average level of motivation of top level employees is 3.2515 and the average level of motivation of middle, lower employees is 3.0474.

B. Existing Status of Organizational Productivity in Sri Lankan Apparel Manufacturing Sector
When consider on the productivity, it was measured in different ways. Such as productivity or efficiency of the production floor, goal achievement of the production factory, quality of the output, efficiency of resource utilization and so on. Productivity of the manufacturing plants was obtained on the day before data collection. And the variation of productivity of the selected organizations are shown as in below (Figure 4.2). However, the set productivities for the day was vary from organization to organization. And the set productivity depended with many factors, such as product changes and design changes of the production floor. According to the above figure, organization five had the highest productivity and it was 69.01%, while organization two had the lowest productivity and it was 43.09%. And organization three, four, six and seven had somewhat higher productivities with comparison to the rest of the organizations and the productivities were 65.28%, 60.88%, 65.38% and 68.50% respectively (Figure 4.2).

Figure 4.1 Status of overall motivation in different employment categories of top level

Figure 3.3.788
3.1125
3.05
3.0
3.15
3.2
3.25
3.3
Average Level of Motivation
Administrative
Technical
Employment Category
Figure 4.2 Comparison of the productivity of ten selected organizations on day before data collection.

V. DATA ANALYSIS

A. Testing of Hypothesis 01

According to the Simple Linear Regression method the test statistics are as in below.

Variables Entered/Removed

<table>
<thead>
<tr>
<th>Variables Entered</th>
<th>Variables Removed</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation*</td>
<td></td>
<td>Enter</td>
</tr>
</tbody>
</table>

a. All requested variables entered.

Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.841*</td>
<td>.708</td>
<td>.707</td>
<td>2134920</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Motivation

According to the model summery of regression method as in above, correlation (R) was 0.841 and it was a strong positive relationship. And R square, which is the measure of the success of the model, was 0.708. According to the R square value, 70.80 % of the variance in productivity was accounted by employee motivation.

The significant value was 0.000 and it was lower than 0.05 (p < 0.05) and null hypothesis was rejected and alternative hypothesis was accepted. So, there was a significant positive relationship between employee motivation and organizational productivity.

Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.453 (.072)</td>
<td>.841 (34.754)</td>
<td>20.112</td>
<td>.000*</td>
</tr>
<tr>
<td>Motivation</td>
<td>.804 (.023)</td>
<td>.841</td>
<td>34.754</td>
<td>.000</td>
</tr>
</tbody>
</table>

Finally, according to the above Coefficient table, Beta (Coefficient) was the b (slope) in the regression equation. Beta was positive and showing positive relationship. So, the higher the motivation, productivity also was higher. The regression equation is: \( Y = 1.453 + 0.841X \)

B. Testing of Hypothesis 02

Multiple Linear Regression method was applied for statistical analysis of hypothesis two. In model summery the R square was 0.337. According to this model, 33.70 % of variations in motivation were explained by feedback, co-workers, task design, communication, supervision and rewards.

The significant for the model was 0.000 and it was lower than 0.05 (p < 0.05) and null hypothesis was
rejected and alternative hypothesis was accepted. So, different organizational factors significantly affect on motivation.

**ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>26.181</td>
<td>6</td>
<td>4.363</td>
<td>41.71</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>51.570</td>
<td>493</td>
<td>.105</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>77.750</td>
<td>499</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Feedback, Co-Workers, Task Design, Communication, Supervision, Rewards

Next, according to the coefficients, significance of the variables; feedback, co-workers, task design, communication, supervision and rewards are explained. According to the significant of feedback, the Sig. is 0.001 and it is lower than 0.05 (p < 0.05). Therefore, feedback significantly affect on motivation. According to the significant of co-workers, the Sig. is 0.001 and it is lower than 0.05 (p < 0.05). Therefore, co-workers significantly affect on motivation. According to the significant of task design, the Sig. is 0.000 and it is lower than 0.05 (p < 0.05). Therefore, task design significantly affect on motivation. According to the significant of communication, the Sig. is 0.218 and it is higher than 0.05 (p > 0.05). Therefore, communication significantly do not affect on motivation. According to the significant of supervision, the Sig. is 0.000 and it is lower than 0.05 (p < 0.05). Therefore, supervisor significantly affect on motivation. According to the significant of rewards, the Sig. is 0.000 and it is lower than 0.05 (p < 0.05). Therefore, rewards significantly affect on motivation.

C. Testing of Hypothesis 03

Multiple Linear Regression method was applied for statistical analysis of hypothesis three. In model summery the R square was 0.390. According to this model, 39.0 % of variations in motivation were explained by needs, interest, attitudes and perception of behaviour.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>33.268</td>
<td>4</td>
<td>8.317</td>
<td>79.262</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>51.941</td>
<td>495</td>
<td>.105</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>85.209</td>
<td>499</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Needs, Interest, Attitudes, Perception of Behaviour
b. Dependent Variable: Productivity

According to the multiple regression method the significant for the model was 0.000 and it was lower than 0.05 (p < 0.05) and null hypothesis was rejected and alternative hypothesis was accepted. So, different personal factors significantly affect motivation.

Next, according to the coefficients, significance of the variables; needs, interest, attitudes and perception of behaviour are explained. According to the significant of perception of behaviour, the Sig. is 0.000 and it is lower than 0.05 (p < 0.05). Therefore, perception of behaviour significantly affect on motivation. According to the significant of interest, the Sig. is 0.000 and it is lower than 0.05 (p < 0.05) and interest significantly affect on motivation. According to the significant of attitudes, the Sig. is 0.526 and it is higher than 0.05 (p > 0.05) and attitudes significantly do not affect on motivation. According to the significant of needs, the Sig. is 0.000 and it is lower than 0.05 (p < 0.05). Therefore, needs significantly affect on motivation.

C. Testing of Hypothesis 04

The hypothesis four was analysed in a non statistical way and qualitative analysis technique was used. For organizational factor and personal factors, separately, satisfaction scores of top level and middle, lower level were compared with each other. According to the figure below, satisfaction scores for different personal factors among top level employees are higher for all the factors than in middle, lower level employees.
Figure 5.1 Comparison of average employee satisfactions on different personal factors among top level and middle, lower level

According to the figure above, satisfaction scores for different personal factors among top level employees are higher for all the factors than in middle, lower level employees. Therefore, the satisfaction levels of top level employees and middle, lower level employees for different personal factors and different organizational factors were not match with each other. So, there is an interaction between top and middle, lower level employees on both organizational and personal factors. So, the null hypothesis was rejected and alternative hypothesis was accepted. Therefore, different interaction factors significantly affect motivation.

VI. CONCLUSION

There is a significant effort made by the authority to improve productivity through a sound motivational mechanism in Sri Lankan apparel manufacturing industry. Financial motivational mechanisms such as, attractive monthly salary structure with different allowances, over time payment system, salary increment system, profit bonus system, incentive system, reward system are being launched by responsible authority. Non financial motivational mechanisms such as, promotion scheme, employee training and development, welfare benefits, health and medicinal benefits, attractive physical and socio-psychological environment are being provided to apparel employees in order to enhance their motivational levels.

There is a strong positive relationship between employee motivation and productivity, and also different personal factors; such as perception of behaviour, interest, needs as well as, different organizational factors; feedback, co-workers, task design, supervision and rewards significantly affect employee motivation, while attitudes and communication do not significantly affect on employee motivation in Sri Lankan apparel manufacturing sector. Further, there is an interaction between two key employment hierarchical levels; top level and middle, lower level for different personal factors and organizational factors.

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\(^2\)Author 3
Implementation of the 360 Degree Performance Appraisal Feedback System in Private Sector Organizations in Sri Lanka

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Abstract—Performance appraisal is very important for effective management which helps to develop the employees and leads to improve the performance of organizations. The job performance of employees in an organisation is measured and evaluated through a performance appraisal system over a period of time with set standards. Different types of organizations are using different methods of performance evaluation and 360 degrees performance appraisal is one of them. Though, this system is not popular in Sri Lanka, many multinational organizations are using this method for measuring employees’ performance. This technique receives feedback of employees’ performance not only from their supervisor/s but also from co-workers, subordinates, self, customers etc. as a multiple source feedback. Many organizations in Sri Lanka are managed as per the hierarchy and the decisions are made by the top level of the hierarchy. Most of the time, subordinates are dissatisfied about their performance rating which was given by their supervisor due to the usage of a performance feedback system that does not absorb the real image of their performances. Therefore, the research problem was whether the 360 degree performance feedback system can be implemented in Sri Lankan private sector organizations or not. This paper attempts to discuss possible ways of implementing this system in private sector organizations in Sri Lanka. Quantitative as well as qualitative data were utilized to achieve the objectives. The sample includes 200 employees from selected 10 medium and large scale organizations in Colombo area. A random number table was utilized to select 20 employees from each organisation. Data presentation and analysis were based on selected statistical measures (central tendency, dispersion and skewness), diagrams and tables. SPSS software was utilized to analyse the collected data. The results depict that the 360 degree performance feedback system is not utilised by the private organisations in Colombo area mainly due to the hierarchy of the organizational culture, not suitable for their organisation, time consumption and unawareness. However, the findings show that there are some avenues to implement the 360 degree performance feedback system as an addition to the existing conventional appraisal system. Implementation of the 360 degree performance appraisal feedback system in Sri Lankan private sector organizations will help to develop the organizations as well as to increase satisfaction levels of employees.

Keywords — 360 degree feedback system, Employee satisfaction, Organisation development, Performance appraisal

I. INTRODUCTION

Performance appraisal of employees is necessary to understand abilities of each employee’s competencies, relative merit and worth for the organisation. Each employee in an organisation is interested in performance feedback in order to know how well he or she performs in his or her tasks. One of the most important ways that employees can develop in an organisation is to receive feedback ratings of their performance. Traditionally, employees received feedback of their performance only from their supervisor/s. In 360 degree feedback system, employees receive multiple source feedback on their performances not only from their supervisor/s but also from co-workers, subordinates, the employees themselves, customers, etc. Therefore, it is also known as multi source feedback as it collects information of employee’s performance from many angles. The methodology behind the 360 degree feedback system is to absorb the real image of the employee performance by studying in depth information about the current performance. It helps to reduce bias rating as feedback are collected from many sources and also an employee can identify how
he/she perceives himself/herself and how others perceive him/her. Accurate feedback reveals employees where their forte is, and points out where improvements are required. However, many organizations in Sri Lanka are managed as per the hierarchy and the decisions made by the top level of the hierarchy. Most of the time, subordinates are dissatisfied on their performance evaluation rating given by supervisors due to not absorbing a real picture of their performance. Therefore, the research problem was whether the 360 degree performance feedback system can be implemented in Sri Lankan private sector organizations or not. Kohn-Bentley & Bentley (2012) pointed out that 360 degree feedback system is more accurate and fairer than other system which is derives from only one perspective. 360 degree feedback system helps to provide a reliable road map by adding value in the development of employees and thereby driving the organisation on the path of success. The main objective of the research was to explore the possibilities of implementing the 360 degree appraisal and feedback system in the private sector organizations in Sri Lanka. Consequently, some of the other objectives to support the main objective of the research were to evaluate the level of satisfaction of employees on the current performance appraisal technique, to explore the problems faced with the current performance appraisal technique, to find the reasons for not implementing 360 degree performance appraisal technique, to examine the degree of possibility of implementing the 360 degree performance appraisal technique, and to recommend possible strategies to implement the 360 degree feedback appraisal technique.

II. LITERATURE REVIEW

By the early 1900s, the private sector began tracking employee performance through an appraisal system. Performance appraisals have become the preferred method for observing, evaluating, and measuring employee performance (Cadwell, 1995). Performance appraisal is an exercise in observation and judgment, it is a feedback process, and it is an intensely emotional process (Cascio, 1995). Fleenor & Scontrino (1982) pointed that accurately assessed performance appraisal system reflect employees’ true performance. If the employees perceive that, the system is not valid then they will lose faith and not trust the supervisor or the appraisal. The loss of faith and trust eventually leads to declines in productivity. If the appraisal system is valid, the employees who receive high performance ratings are, in fact, the best performers and those employees who receive the lowest ratings are actually the poorest performers (Fleenor & Scontrino, 1982). Whose job satisfaction level is high has a positive attitude towards the job and someone who is not satisfied with his/her job has a negative attitude towards the job (Parsaeian & Arabi, 1978). During the 1960s and 1970s, in the corporate world, organizations like Bank of America, United Airlines, Bell Labs, Disney, Federal Express, Nestle, experimented with multi-source feedback in a variety of measurement situations. Wakhlu (2003) clarifies that the 360-degree performance appraisal feedback system is totally developmental, and it can be linked to the overall performance of the business plans of the organisation and the individuals. The conceptual framework in figure 1 was constructed based on the above studies.

![Figure 1: Conceptual framework of the study](image-url)
H1: The level of satisfaction of the employees on the current performance appraisal technique is below the average level.

H2: The main reason for not implementing 360 degree performance appraisal technique is unawareness.

H3: The degree of possibilities of implementing the 360 degree performance appraisal technique is very low among the selected private sector organizations.

III. RESEARCH METHODOLOGY

The research was based on primary and secondary data. The main data collection tools were questionnaire and semi-structured interview. The questionnaire comprised of 32 questions including gender, age, education, qualifications, position and experience in the current organisation to obtain a general understanding of the participants. The questions were framed in a manner whereby the respondents would provide direct information that helps to provide answers to the research questions and to test the hypotheses. Quantitative as well as qualitative data were utilized to achieve the objectives. The sample included 200 employees from 10 selected medium and large scale organizations in the Colombo area. A random number table was utilized to select 20 employees from each organisation. The opinions of the employees were gathered using a five – point Likert scale. Data presentation and analysis were based on the statistical measures (central tendency, dispersion and skewness), diagrams and tables. Furthermore, SPSS software was utilized to analyse the collected data.

IV. DATA ANALYSIS

The sample includes 123 male and 77 female respondents. Sixty seven percent of the respondents were married. The survey results reveal that 131 respondents are graduates, working at the executive and junior levels of management. Forty-one respondents are postgraduates working at the senior and top level management. Twenty-eight respondents are diploma holders, working as clerical and executive Staff. Majority of the respondents (78%) have experience of one and half to four years at the present organisation. Figure 2 depicts the problems/limitations faced by the respondents with the current performance appraisal techniques used by their organizations.

<table>
<thead>
<tr>
<th>Problems/limitations</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance rate given by the evaluator is not reasonable</td>
<td>0.27</td>
</tr>
<tr>
<td>Evaluator does not discuss with the employee about the performance and rating</td>
<td>0.24</td>
</tr>
<tr>
<td>Evaluator does not provide performance feedback of employee frequently</td>
<td>0.18</td>
</tr>
<tr>
<td>Rater consider bias issue while evaluating</td>
<td>0.16</td>
</tr>
<tr>
<td>Evaluator does not keep documentation file of performance during the evaluation period</td>
<td>0.12</td>
</tr>
<tr>
<td>Your rater does not knows about job duties and tasks of employee</td>
<td>0.02</td>
</tr>
<tr>
<td>Evaluator does not use correct appraisal criteria and form</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Table1 demonstrates that with the highest weight value of 0.27 on the problem ‘performance rate given by the evaluator is not reasonable’ was the most significant issue faced by the majority of the employees. The findings show that the evaluator does not discuss about the performance rate given by him/her with the employee. However, it shows that the majority of the evaluators use the correct
appraisal criteria and form and know the job duties and tasks of the employees. Cronbach’s Alpha calculated based on the feedback of 11 variables that directly affect the satisfaction levels of employees was 0.826. The high value of the Cronbach’s Alpha suggests that the questionnaire used for collecting data on satisfaction levels is highly reliable. Table 2 presents the different Cronbach’s Alphas if the considered variable is deleted.

Table 2: Different Cronbach’s Alphas if the considered variable is deleted

<table>
<thead>
<tr>
<th>Label</th>
<th>Variable</th>
<th>Cronbach’s Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALR</td>
<td>Salary</td>
<td>.859</td>
</tr>
<tr>
<td>FACI</td>
<td>Facilities</td>
<td>.819</td>
</tr>
<tr>
<td>RECW</td>
<td>Relation with coworkers</td>
<td>.828</td>
</tr>
<tr>
<td>REMG</td>
<td>Relation with management</td>
<td>.813</td>
</tr>
<tr>
<td>CRPL</td>
<td>Career planning</td>
<td>.808</td>
</tr>
<tr>
<td>MOEM</td>
<td>Motivated by employer</td>
<td>.790</td>
</tr>
<tr>
<td>ORPL</td>
<td>Organisation policies</td>
<td>.796</td>
</tr>
<tr>
<td>TRDE</td>
<td>Training &amp; Development</td>
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<td>Opportunity</td>
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<td>.809</td>
</tr>
<tr>
<td>EMPO</td>
<td>Empowerment</td>
<td>.806</td>
</tr>
</tbody>
</table>

Figure 3 represents the satisfaction levels of employees based on selected 11 variables relevant to their organizations. A five point Likert scale was used to gather the opinion of the respondents on their satisfaction level of an organisation. The satisfaction levels of the respondents on selected 11 variables relevant to their organizations are presented in terms of percentage in figure 3.

Figure 3 displays that 48 percent of the respondents are dissatisfied about the opportunities they have in the organization and none of the respondents are highly satisfied about the relationship with management of their—organisation. Eighteen percent of the respondents are highly dissatisfied about their career plan and eight percent of the respondents are highly dissatisfied about salary. However, it shows that 39 percent of the respondents are having good relationship with their co-workers. Twenty nine percent of the respondents are satisfied about the facilities provided by their organisations.
Figure 4 represents reasons for not implementing 360 degree performance appraisal feedback system at their organizations. The opinion of 56 percent of employees as the reason for not implementing 360 degree performance feedback system was due to the hierarchy of the organisation culture. The reason presented 35 percent of the employees was unawareness on 360 degree performance feedback system. According to the opinion of 46 percent of employers, 360 degree performance feedback system is not suitable for their organisation and 21 percent of employers have mentioned that this system is time consuming.

V. CONCLUSION

The study reveals that most of the employees are not fully satisfied with the existing performance rating and evaluation technique. The 360 degree performance feedback system is not utilised by the private sector organisations in Colombo area due to the hierarchy of the organisation culture, unawareness, unsuitability for their organisation and time consumption. However, 73 percent of the respondents have demonstrated positive reactions to the 360 degree feedback process and its implementation. Hence, there is a possibility of implementing the 360 degree performance feedback system in the selected private sector organisations. The implementation of the 360 degree performance feedback system in an organisation will enhance the satisfaction level of the employees and the growth of the organization. Private sector organizations can implement the 360 degree feedback system as an addition to the existing performance appraisal technique and compare the results for further improvements.

REFERENCES


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Is Stress a Bad Factor in Employee Work Performance (EWP) in Sri Lankan Public Sector?

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Abstract- Stress experienced by employees has been identified by plenty of scholars as a horrible phenomenon that should be eliminated so that the employee work performance (EWP) could be enhanced. In other word, stress has mostly been noted as a negative phenomenon as far as the EWP is concerned. This notion of idea was tested in the present enquiry by analyzing data obtained in Sri Lankan public sector organizations. The study was conducted in the months between July to December 2013 in association with Sri Lankan public sector organizations covering three provinces (Western, Southern, and North Central). The sample studied was composed of 661 employees belonged to three employee categories (managerial, clerical, and below clerical) working in three organizational categories (national, provincial, and district). The methodology of the study was the survey method in which a questionnaire was used as the key data gathering tool. Data analysis process was occurred by the use of computer based SPSS package (version 20), and one-way ANOVA system was used to investigate co-relations among variables. The study clearly identified those who had experienced some level of stress reported over 30% work performance as compared to those who experienced no stress. According to the result of the hypothesis test, it was found that there is no significant difference in mean impact level due to stress among employees belonged to diverse employee or organizational categories. These findings are a clear indication to suggest that stress caused by employees (irrespective of their employee and organizational categories) is no longer a horrible factor in taking EWP into account, and what is the truth is the opposite. Last but not the least, the findings of the study makes a counter argument against the dominant ideology, to state that some level of stress experienced by employees is a positive factor that enhances EWP.

Keywords: Stress, Employee Work Performance (EWP), Findings

I. INTRODUCTION

Stress is a fact, and a normal part of everyday life (Klinic Community Health Centre, 2010). Stress is often described as a feeling of being overloaded, wound up tight, tense, and worried. We all experience stress at times. It can sometimes help to motivate us to help to get a task finished, or perform well. But stress can also be harmful if we become over-stressed and it interferes with our ability to get on with our normal life for too long (Australian Psychological Society.2014). Stress has also been most often linked to organization setup, and plenty of studies have been focused on organizational employees. What is equally important is that most of studies have noted the relationship between employee work performance (EWP) and the level of their stress, to say that more stress causes low EWP and vice-verse. Thus, stress has mostly been noted as a negative phenomenon as far as the EWP is concerned. This notion of idea was tested in the present enquiry, and it was intended to investigate whether this ideology (concerning stress as a negative factor as far as the EWP is concerned) would come into reality by analyzing data obtained in Sri Lankan public sector organizations. This purpose would be achieved by addressing three research questions (as discussed later).

II. SIGNIFICANCE OF THE STUDY

Even though organizational studies have been plenty in the field of management, surprisingly few studies are to be found organizational studies in sociological perspective. Sociological inquiries in this particular field would in fact bring a remarkable insight particularly on social factors in
organizations, that on the other hand could be used in order to enhance the employee work performance in general and organizational effectiveness in particular. Specifically, the study brings some hidden factors of stress in employees. Accordingly, this study unveils certain novel pathways in the study of organizations, and thereby, the study carries an enormous significance.

III. RESEARCH QUESTIONS

The study tends to raise following three questions;
1. What sort of correlation does exist between EWP and the level of stress faced by employees in the context of organizations?
2. Whether there is a significant difference of the level of stress faced by employees according to organizational category?
3. Whether there is a significant difference of the level of stress faced by employees according to job category?

IV. METHODOLOGY

The study was conducted in the months between July to December 2013 in association with Sri Lankan public sector organizations covering three provinces (Western, Southern, and North Central). The sample studied was composed of 661 employees belonged to three employee categories (managerial, clerical, and below clerical) working in three organizational categories (national, provincial, and district). The methodology of the study was the survey method in which a questionnaire was used as the key data gathering tool (quantitative data). In addition, case study and simple observation methods (Qualitative data) were used in the study. Data analysis process for quantitative data was occurred by the use of computer based SPSS package (version 20), and one-way ANOVA system was used to investigate correlations among variables, whereas qualitative data were thoroughly analyzed to come into logical conclusions.

V. DATA ANALYSIS AND FINDINGS OF THE STUDY

1. EWP and the Level of Stress

The study clearly identified those who had experienced some level of stress reported 31.19% work performance as compared to those who experienced no stress. According to case studies, it was clearly found that almost all respondents admitted the positive character of their stress. For instance, most of them elaborated (See Box 1) that their stress would enhance their work performance.

**Box 1: Some Level of Stress is Better**

Gunawardena, a development assistant belonged to clerical and parallel services in a district level organization stated the positive side of his stress in his work.

“In my point of view, stress helps me to perform my work tasks on time, with no delay. It seems that I tend to neglect even my day to day activities when I feel no stress. According to my knowledge, my colleagues too work better when they have some level of stress. So, I feel some level of stress is advantageous in personal and organizational level”

Source: Field Study 2013

II. The Level of Stress Faced by Employees According to Organizational Category and Job Category

Here, it was intended to make findings through one way ANOVA. The related assumptions are indicated as follows;

a. All three populations involved follow normal distribution
b. All populations have the same variance
c. The samples are randomly selected and independent of one another

According to our analysis, the above assumptions were found to be true, and resembled to the data in the study, and therefore continued with ANOVA.

VI. HYPOTHESIS APPLIED IN THE STUDY

- For the level of stress faced by employees according to organizational category

Null hypothesis (H₀) – The mean levels of the impact of work on the organization due to stress do not differ within the three levels of organizational categories.

Alternative hypothesis (H₁) – The mean levels of the impact of work on the organization due to stress differ for at least two of the three levels of organizational categories.

- For the level of stress faced by employees according to job category

Null hypothesis (H₀) – The mean levels of the impact of work on the organization due to
stress do not differ within the three levels of employee categories. Alternative hypothesis \( (H_a) \) – The mean levels of the impact of work on the organization due to stress differ for at least two of the three levels of employee categories.

VI. RESULTS OF THE HYPOTHESIS TEST

Table 1: Level of Stress According to Organizational Category (Descriptive Statistics)

<table>
<thead>
<tr>
<th></th>
<th>N (No. of respondents)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>133</td>
<td>32.59</td>
</tr>
<tr>
<td>Provincial</td>
<td>318</td>
<td>29.23</td>
</tr>
<tr>
<td>District</td>
<td>210</td>
<td>33.26</td>
</tr>
<tr>
<td>Total</td>
<td>661</td>
<td>31.19</td>
</tr>
</tbody>
</table>

Source: Field Study 2013

Table 2: ANOVA Table to Test The Level of Stress Faced by Employees According to Organizational Category

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2385.826</td>
<td>2</td>
<td>1192.9</td>
<td>.929</td>
<td>.395</td>
</tr>
<tr>
<td>Within Groups</td>
<td>84706.913</td>
<td>658</td>
<td>1283.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>847092.738</td>
<td>660</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Study 2013

Having understood the significance level \( \alpha (= 0.05) < \) tested Significant value \( (0.862) \) according to Table 4, it was possible to reject the alternative hypothesis. Since we rejected the alternative hypothesis, there is sufficient evidence not to reject the mean levels of the impact of work on the organization due to stress do not differ within the three levels of job categories.

Table 4: ANOVA Table to Test The Level of Stress Faced by Employees According to Job Category

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>381.244</td>
<td>2</td>
<td>190.62</td>
<td>.148</td>
<td>.862</td>
</tr>
<tr>
<td>Within Groups</td>
<td>846711.495</td>
<td>658</td>
<td>1286.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>847092.738</td>
<td>660</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Study 2013

VII. CONCLUSION

it was found that there is no significant difference in mean impact level due to stress among employees belonged to diverse employee or organizational categories.

Findings of the study are a clear indication to suggest that stress caused by employees (irrespective of their employee and organizational categories) is no longer a horrible factor in taking EWP into account, and what is the truth is the opposite. Last but not the least, the findings of the study makes a counter argument against the dominant ideology, to state that some level of stress experienced by employees is a positive factor that enhances EWP.

According to findings, there is no significant difference of the level of stress faced by employees according to organizational and job categories.

So, is clear that employees in Sri Lankan public sector organizations admit their level of stress as a positive factor irrespective of to what category (organizational/ job) they belong.

Last but not the least, based on the findings, it could be suggested that some level of stress should be upheld in the maintenance of employees of diverse categories in organizations of many varieties so that the increase of employee
performance in general and the organizational performance in particular.

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Analysis of the Household Demand for Dairy Products in Sri Lanka:
An Almost Ideal Estimation with a Censored Regression

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Abstract — Being the leading segment in the livestock sector in Sri Lanka, the dairy sector still is incapable of meeting at least half of the domestic requirement. Moreover, the annual per capita consumption of milk remains lower than the recommended level for an average Sri Lankan. Hence, this study intends to present price and expenditure elasticities, in order to discover the consumption behaviour of five types of dairy products. Further, this aims to determine the impact of demographic factors which influence the dietary choices of those dairy produce. This paper employed the Linear Approximation of the Almost Ideal Demand System (LA/AIDS) to estimate price and expenditure elasticities, by utilizing the Household Income and Expenditure Survey, 2006/07. The infrequency of purchases, a typical problem encountered in LA/AIDS estimation is circumvented by using a probit regression in the first stage, to capture the effect of demographic factors, in consumption choice. Results reveal that, Sri Lankans consume these milk produce regardless of the area they live, size of the household, gender of the household head, education level of the head and spouse, prevalence of heart diseases and diabetes, while incidence of having young children and blood pressure will have a significant impact. All milk products except milk powder are highly responsive to their own prices. Fresh milk, milk powder and infant milk powder are identified as necessities whereas, the rest show luxurious behavior, with the income. However, demand for dairy products will be more influenced by price related policies than income oriented policies. Because milk powder is both price and income inelastic, and most are imported, any restriction would massively affect the demand for milk powder. Moreover, while identifying consumers’ needs and wants through various research studies, domestic production should be promoted to meet the current demand.

Keywords — AIDS model, censoring, dairy products

I. INTRODUCTION

Dairy sector has been identified as the leading sector amid other livestock sub sectors in Sri Lanka, where the contribution of livestock sector to the national GDP in 2011 was approximately one percent (Department of Animal Production and Health, 2011). However, only about 15-20% of the domestic requirement has been realized at present by the dairy industry, whereas achieving 50% self-sufficiency in milk products by 2015 remains confronting to the government (Ranaweera, 2009).

Conversely, out of milk and milk products available for consumption, 71.2% have been imported into the country, mostly in the form of powdered milk (Department of Animal Production and Health, 2011), which has been become controversial due to the existence of toxic chemical dicyandiamide (DCD).

Additionally, the annual per capita consumption of milk has been recorded as much lower than the recommended level for an average Sri Lankan. Consequently, increasing the consumption of milk and/or milk products in the country has become critical in order to meet the nutrient requirement (Bogahawatte and Herath, 2006).

In identifying the most appropriate policy interventions, food demand patterns of a particular country enormously support to improve the nutritional status of individuals and households. Hence, the knowledge of the food consumption behaviour is essential for sectoral and macroeconomic policy analysis where estimation of price and income elasticities of food is the key to the analysis of food demand behaviour (Weliwita et al., 2003).

Thus, this study intends to estimate price and expenditure elasticities by incorporating an economic framework to households in Sri Lanka, in
order to discover the consumption behaviour of dairy products which are more commonly consumed in the form of powder or liquid. Moreover, this intends to determine the impact of demographic factors which influence the dietary choices of these dairy produce.

II. METHODOLOGY

A. Model Specification

The Almost Ideal Demand System (AIDS) proposed by Deaton & Muellbauer (1980) was employed in our study, since it has considerable advantages over both the Rotterdam and Translog models which have been frequently used in the past to analyze consumption patterns because ‘The AIDS, gives an arbitrary first-order approximation to any demand system; satisfies the axioms of choice exactly; aggregates perfectly over consumers without invoking parallel linear Engel curves; has a functional form which is consistent with known household-budget data; is simple to estimate, largely avoiding the need for nonlinear estimation; and can be used to test the restrictions of homogeneity and symmetry through linear restrictions on fixed parameters’ (Deaton & Muellbauer, 1980).

The AIDS is built upon the minimum cost or expenditure function, which is required to achieve a specific utility level at given prices. The AIDS model in budget share form can be expressed as:

\[ W_i = \alpha_i + \beta_i \ln \left( \frac{X}{P} \right) + \sum_j \gamma_{ij} \ln (P_j) \]  
(1)

Where, \( W_i \) = budget share of \( i^{th} \) dairy product; \( X \) = the total expenditure on all dairy products per household; \( P_j \) = prices of the \( j^{th} \) dairy product; \( P \) = price index defined as:

\[ \ln P = \alpha_0 + \sum_k \alpha_k \ln P_k + \frac{1}{2} \sum_j \sum_k \gamma_{kj} \ln P_k \ln P_j \]  
(2)

(Deaton & Muellbauer, 1980)

The \( \alpha_i \) parameter is the average budget share when all prices and real expenditure are equal to one. Where, \( \beta_i \) and \( \gamma_{ij} \) parameters measure the change in the \( i^{th} \) budget share for a unit change in the real income and \( P_j \) respectively (Weliwita et al., 2003). Although the true AIDS model possesses many desirable properties, its nonlinearity poses difficulties in estimation (Feng & Chern, 2000). To avoid nonlinearity, \( P \) in equation (1) was estimated as the Stone price index:

\[ \ln (P^*) = \sum_i \overline{W}_i \ln (P_i) \]  
(3)

Where, \( \overline{W}_i \) stands for the mean budget share of \( i^{th} \) dairy product (Bett et al., 2012).

Therefore, the Linear Approximation of the AIDS (LA/AIDS) was used in this study, where the budget shares of various commodities are linearly related to logarithms of real expenditure and relative prices (Deaton & Muellbauer, 1980). Hence, the LA/AIDS can be defined as:

\[ W_i = \alpha_i + \beta_i \ln \left( \frac{X}{P^*} \right) + \sum_j \gamma_{ij} \ln (P_j) \]  
(4)

B. Data and Estimation Procedure

Data for the analysis were taken from the Household Income and Expenditure Survey (HIES) 2006/07, conducted over a period of 12 monthly rounds, by the Department of Census and Statistics, Sri Lanka. HIES provided information on demographic and socio-economic characteristics, income and expenditure of 18,544 households in Sri Lanka, excluding the Northern province and Trincomalee district in the Eastern province. For our study, weekly consumption of five types of dairy products (fresh milk, pasteurized milk, milk powder, infant milk powder and sterilized milk) was selected.

Because HIES doesn’t provide the actual market prices of commodities, a proxy of unit values (expenditure/quantity) was used as prices, since it is the common practice in which literature (Park et al., 1996; Weliwita et al., 2003) has followed. However, some households hold zero expenditure due to non-preference, sufficient household inventory, or as responses to market prices. The unit values of those households were replaced by the average values of the nonzero unit values within the most ideal cluster (Weliwita et al., 2003).

A probit regression was carried out for five types of dairy products, to model the dichotomous behaviour of the consumption decision to buy or not to buy. Following extant literature on demand (Bett et al., 2012; Heien & Wessells, 1990; Park et al., 1996; Tiffin & Arnoult, 2010), demographic characteristics in Table 1 were considered in the probit regression, with the intention of capturing tastes and preferences among various households.
Table 1: Demographic variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector</td>
<td>Two dummy variables&lt;br&gt;urban=1, otherwise=0&lt;br&gt;rural=1, otherwise=0</td>
</tr>
<tr>
<td>Household size</td>
<td></td>
</tr>
<tr>
<td>Gender of the household head</td>
<td>One dummy variable&lt;br&gt;male=1, female=0</td>
</tr>
<tr>
<td>Education level of the head</td>
<td></td>
</tr>
<tr>
<td>Education level of the spouse</td>
<td></td>
</tr>
<tr>
<td>Presence of young children up to three years of age</td>
<td>One dummy variable&lt;br&gt;if present=1, otherwise=0</td>
</tr>
<tr>
<td>Presence of heart diseases</td>
<td>One dummy variable&lt;br&gt;if present=1, otherwise=0</td>
</tr>
<tr>
<td>Presence of blood pressure</td>
<td>One dummy variable&lt;br&gt;if present=1, otherwise=0</td>
</tr>
<tr>
<td>Presence of diabetes</td>
<td>One dummy variable&lt;br&gt;if present=1, otherwise=0</td>
</tr>
</tbody>
</table>

Further, to circumvent the infrequent consumption observed in most households, Inverse Mills Ratios (IMRs) for each household for each dairy product were computed using probit parameters, where IMR($\Phi_i$) = $\theta$ (standard normal density)/$\Theta$ (cumulative probability function) and then, they were used in the AIDS as an instrumental variable (Weliwita et al., 2003).

Hence, the estimating model is:

$$W_i = \alpha_i + \beta_i \ln \left( \frac{X}{P} \right) + \sum_j \gamma_{ij} \ln (P_j) + \omega_i \Phi_i + \epsilon_i \quad (5)$$

Where, $\omega_i = $ coefficient of $i^{th}$ IMR; $\epsilon_i = $ error term of $i^{th}$ dairy product equation (Bett et al., 2012).

To conform to the demand theory, adding up (6), homogeneity (7) and symmetry (8) restrictions were imposed on the equation (5) as:

$$\sum_i \alpha_i = 1, \sum_i \beta_i = 0, \sum_i \gamma_{ij} = 0, \sum_i \omega_i = 0, j = 1, \ldots, n. \quad (6)$$

$$\sum_j \gamma_{ij} = 0, i = 1, \ldots, n. \quad (7)$$

$$\gamma_{ij} = \gamma_{ji}, i, j = 1, \ldots, n. \quad (8)$$

C. Elasticities

The expenditure elasticity of $i^{th}$ dairy product was estimated as:

$$\eta_i = 1 + \frac{\beta_i}{\bar{W}_i} \quad (9)$$

According to the equations 10 and 11, both Marshallian ( uncompensated) and Hicksian (compensated) price elasticities were calculated, respectively as:

$$\epsilon_{ij} = -\delta_{ij} + \frac{\gamma_{ij} - \beta_i \bar{W}_j}{\bar{W}_i} \quad (10)$$

$$\epsilon_{ij} = -\delta_{ij} + \frac{\gamma_{ij}}{\bar{W}_i} + \bar{W}_j \quad (11)$$

Where, $\delta_{ij} = $ Kronecker delta, which is equal to one for $i = j$ and zero for $i \neq j$ (Taljaard et al., 2004).

Since, adding up restrictions ensure that $\sum W_i = 1, one equation (sterilized milk) was dropped from the system. A Seemingly Unrelated Regression (SUR) technique was employed to avoid possible error correlations of each equation. Under the constrained Iterated SUR (ITSUR) procedure, the estimation was carried out in Stata 11.2.

III. RESULTS AND DISCUSSION

A. Empirical Results

Results obtained from the probit model highlights that the model is significant for all milk products at 1% level. Model significance in SUR models is usually checked through Chi-square tests. Here, Chi-squares for all equations are significant at 1% level (Table 2).
Moreover, revealing that ignorance of zero budget shares when estimating the system would generate biased and inconsistent parameter estimates; most of the IMR coefficients are significant at 1% level (Table 5).

**B. Demographic Effects**

Tables 3 and 4 show the impacts of prices (Table 3) and demographic factors (Table 4) on the selection probability of the five types of milk products under study. Table 4 reveal that Sri Lankans consume most of these milk products regardless of the area they live, size of the household, gender of the household head, education level of the head and spouse, prevalence of heart diseases and diabetes.

Conversely, reflecting the variations in lifestyle patterns, availability and access to the dairy products in different areas, estimates highlight that urban households tend to consume pasteurized milk, while there is a significant probability that the estate community is more likely to go for fresh milk. Besides, not surprisingly, households where young children are present reveal a significant positive relationship with the consumption of infant milk powder. Moreover, it is quite clear that milk powder is more favoured by households with blood pressure patients than other dairy produce, as they are frequently encouraged to consume low-fat milk in order to obtain the nutrients which lower the blood pressure.

**C. Price Effects and Price Elasticities**

Of the outcome obtained from the probit model, own-price coefficients are significantly negative for all dairy products except milk powder and sterilized milk (Table 3). However, corroborating the usual consumer behavior of reducing the consumption when prices increase, SUR estimates for own-price coefficients of almost all milk products carry a negative sign (Table 5).

Marshallian or uncompensated price elasticity contains both the income effect and substitution effect while Hicksian or compensated price elasticity reflects only the substitution effect. As expected, the Marshallian own price elasticities of all dairy produce are negative and hence, consistent with the utility theory (Table 6). The values denoted that only milk powder is less responsive to its own price changes, while all others are more responsive. It infers that, in case of a general price increase, consumption of all dairy products except milk powder would drop by a larger proportion. The price inelasticity of milk powder depicts its status of being prominent among all other dairy products, symbolizing the trend to purchase milk powder whatever the prices it holds.

When Marshallian cross price elasticity is considered, they suggest that milk products can be more of substitutes than they are complements. However, Hicksian price elasticity is a better measure of substitutability between two goods, since it measures only the substitution effect leaving the income effect out (Weliwita et al., 2003). Hicksian cross-price elasticities indicate that all dairy produce are having substitutable relationships with each other (Table 7). Cross price elasticities suggest that there is a strong substitutable relationship between infant milk powder and fresh milk, whereas both of them can be substituted with milk powder. While highlighting the strong substitutable relationship of infant milk powder and fresh milk with milk powder (1.0427 and 0.9531 respectively), estimates also suggest that households would alter consumption between fresh milk and infant milk powder according to the price changes, implying that parents would however manage price fluctuations so as to avoid the risk and incidence of becoming their children undernourished.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Probit Prob&gt; chi 2</th>
<th>Chi-square value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh milk</td>
<td>0.0000</td>
<td>106.56</td>
<td>0.0000</td>
</tr>
<tr>
<td>Pasteurized milk</td>
<td>0.0000</td>
<td>57.42</td>
<td>0.0000</td>
</tr>
<tr>
<td>Milk powder</td>
<td>0.0000</td>
<td>330.01</td>
<td>0.0000</td>
</tr>
<tr>
<td>Infant milk powder</td>
<td>0.0000</td>
<td>623.88</td>
<td>0.0000</td>
</tr>
<tr>
<td>Sterilized milk</td>
<td>0.0002</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 2: Model significance in probit and SUR
Table 3: Parameter estimates of the Probit model

Note: Superscripts a, b, and c denote statistical significance at 1, 5, and 10 percent level, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fresh milk</th>
<th>Pasteurized milk</th>
<th>Milk powder</th>
<th>Infant milk powder</th>
<th>Sterilized milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh milk price</td>
<td>-0.7612 a</td>
<td>0.4611 a</td>
<td>0.7364 a</td>
<td>0.9065 a</td>
<td>0.7747 a</td>
</tr>
<tr>
<td>Pasteurized milk price</td>
<td>-0.4771</td>
<td>-1.2355 a</td>
<td>0.9490 a</td>
<td>-0.0281</td>
<td>0.3479</td>
</tr>
<tr>
<td>Milk powder price</td>
<td>0.4861 c</td>
<td>-0.2067</td>
<td>-0.2990</td>
<td>0.8616 a</td>
<td>0.3218</td>
</tr>
<tr>
<td>Infant milk powder price</td>
<td>-0.0807</td>
<td>0.2898</td>
<td>3.0127 a</td>
<td>-0.7075 a</td>
<td>0.0079</td>
</tr>
<tr>
<td>Sterilized milk price</td>
<td>0.1261</td>
<td>0.6093 a</td>
<td>-0.1356</td>
<td>0.7318 a</td>
<td>0.2793</td>
</tr>
<tr>
<td>Real income</td>
<td>0.3059 a</td>
<td>0.4499 a</td>
<td>0.5566 a</td>
<td>1.3719 a</td>
<td>0.2985 a</td>
</tr>
<tr>
<td>Constant</td>
<td>-7.6156 a</td>
<td>-6.9098 a</td>
<td>2.1451 a</td>
<td>-10.4584 a</td>
<td>-4.0166</td>
</tr>
</tbody>
</table>

Table 4: Parameter estimates of the Probit model - demographic level variables

Note: Superscripts a, b, and c denote statistical significance at 1, 5, and 10 percent level, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fresh milk</th>
<th>Pasteurized milk</th>
<th>Milk powder</th>
<th>Infant milk powder</th>
<th>Sterilized milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban sector</td>
<td>-0.0556</td>
<td>0.6427 a</td>
<td>-0.0529</td>
<td>0.0802</td>
<td>3.1032</td>
</tr>
<tr>
<td>Rural sector</td>
<td>-0.2842 b</td>
<td>0.2801</td>
<td>0.0484</td>
<td>0.0563</td>
<td>2.9123</td>
</tr>
<tr>
<td>Household size</td>
<td>0.0018</td>
<td>0.0083</td>
<td>-0.0095</td>
<td>-0.0987 a</td>
<td>-0.0026</td>
</tr>
<tr>
<td>Gender of the head</td>
<td>0.1123</td>
<td>0.2177</td>
<td>0.0387</td>
<td>-0.1634</td>
<td>-0.0420</td>
</tr>
<tr>
<td>Education level of the head</td>
<td>-0.0105</td>
<td>0.0183</td>
<td>0.0232</td>
<td>-0.0154</td>
<td>-0.0009</td>
</tr>
<tr>
<td>Education level of the spouse</td>
<td>0.0194</td>
<td>0.0124</td>
<td>0.0230</td>
<td>-0.0159</td>
<td>-0.0159</td>
</tr>
<tr>
<td>Presence of children</td>
<td>-0.2651 a</td>
<td>-0.2510 a</td>
<td>-0.7137 a</td>
<td>1.9629 a</td>
<td>-0.1566</td>
</tr>
<tr>
<td>Presence of heart diseases</td>
<td>-0.0961</td>
<td>-0.1618</td>
<td>-0.0653</td>
<td>0.0003</td>
<td>0.2026</td>
</tr>
<tr>
<td>Presence of blood pressure</td>
<td>-0.1684</td>
<td>-0.2302 b</td>
<td>0.3572 b</td>
<td>-0.1366</td>
<td>0.1582</td>
</tr>
<tr>
<td>Presence of diabetes</td>
<td>0.1431</td>
<td>0.0881</td>
<td>-0.0664</td>
<td>-0.0806</td>
<td>0.2767 b</td>
</tr>
</tbody>
</table>

Table 5: Parameter estimates of the AIDS

Note: Superscripts a, b, and c denote statistical significance at 1, 5, and 10 percent level, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fresh milk</th>
<th>Pasteurized milk</th>
<th>Milk powder</th>
<th>Infant milk powder</th>
<th>Sterilized milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh milk price</td>
<td>-0.0186 a</td>
<td>0.0096 a</td>
<td>-0.0041</td>
<td>0.0174 a</td>
<td>-0.0043</td>
</tr>
<tr>
<td>Pasteurized milk price</td>
<td>0.0096 a</td>
<td>-0.0207 b</td>
<td>-0.0015</td>
<td>0.0101 b</td>
<td>0.0025</td>
</tr>
<tr>
<td>Milk powder price</td>
<td>-0.0041</td>
<td>-0.0015</td>
<td>-0.0467 a</td>
<td>0.0544 a</td>
<td>-0.0021</td>
</tr>
<tr>
<td>Infant milk powder price</td>
<td>0.0174 a</td>
<td>0.0101 b</td>
<td>0.0544 a</td>
<td>-0.0849 b</td>
<td>0.0030</td>
</tr>
<tr>
<td>Sterilized milk price</td>
<td>-0.0043 c</td>
<td>0.0025</td>
<td>-0.0021</td>
<td>0.0030</td>
<td>0.0009</td>
</tr>
<tr>
<td>Real income</td>
<td>-0.0053 b</td>
<td>-0.0037 b</td>
<td>-0.0731 a</td>
<td>0.0724 a</td>
<td>0.0097</td>
</tr>
<tr>
<td>IMR</td>
<td>-0.0153 a</td>
<td>0.0032 i</td>
<td>-0.0322 a</td>
<td>-0.0056 a</td>
<td>0.0499</td>
</tr>
<tr>
<td>Constant</td>
<td>0.0611 b</td>
<td>0.0286</td>
<td>1.6089 i</td>
<td>-0.5539 a</td>
<td>-0.1447</td>
</tr>
</tbody>
</table>
Moreover, conveying that income effect outweighs the substitution effect, some of the cross price elasticities are negative for the Marshallian demand, while being positive for the Hicksian demand.

D. Expenditure Effects and Elasticities

Probit estimates for the real expenditure are significant at 1% level and positive for all dairy products, and it suggests that increase of real income would encourage the preference of consuming any type of milk product (Table 3). Amid the SUR estimates for the real expenditure (Table 5), the positive coefficients denote that consumers would spend more on infant milk powder and sterilized milk, when income rises. Negative coefficients of the budget shares of fresh milk, pasteurized milk and milk powder infer that, when income rises their consumption would increase less proportionately. It may be because of the consumers’ willingness to purchase pasteurized milk so often during their hectic working hours, regardless of their status of income. With respect to fresh milk and milk powder, it can be due to the habitual preference of Sri Lankans who are used to consume either fresh milk or powdered milk at least once for a day and hence, they become so demanded despite the income of consumers. Implying that all dairy products are normal and therefore, increase in income would lead to higher consumption, all expenditure elasticities carry a positive sign (Table 6). Corroborating the usual dietary patterns which can be seen in most households in Sri Lanka and the trend to purchase infant milk powder when young children are present, the elasticity estimates of fresh milk, powdered milk and infant milk powder reveal them as necessities. Alternatively, pasteurized milk and sterilized milk are identified as luxuries signifying that higher income households spend proportionately more on them.

Table 6: Marshallian/uncompensated elasticities

<table>
<thead>
<tr>
<th></th>
<th>Fresh milk</th>
<th>Pasteurized milk</th>
<th>Milk powder</th>
<th>Infant milk powder</th>
<th>Sterilized milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh milk</td>
<td>-1.0263</td>
<td>0.0185</td>
<td>0.0407</td>
<td>-0.0473</td>
<td>-0.0232</td>
</tr>
<tr>
<td>Pasteurized milk</td>
<td>0.0118</td>
<td>-1.0808</td>
<td>0.0171</td>
<td>-0.0168</td>
<td>-0.0054</td>
</tr>
<tr>
<td>Milk powder</td>
<td>0.0045</td>
<td>0.0129</td>
<td>-0.9755</td>
<td>-0.0511</td>
<td>-0.0329</td>
</tr>
<tr>
<td>Infant milk powder</td>
<td>0.0233</td>
<td>0.0200</td>
<td>0.1046</td>
<td>-1.2012</td>
<td>-0.0182</td>
</tr>
<tr>
<td>Sterilized milk</td>
<td>-0.0016</td>
<td>0.0070</td>
<td>0.0208</td>
<td>-0.0301</td>
<td>-1.0067</td>
</tr>
</tbody>
</table>

\[ \eta_i \]

Note: \( \varepsilon_{ij} \) : diagonal values = own price elasticities, off diagonal values = cross price elasticities, \( \eta_i \) = expenditure elasticities

Table 7: Hicksian/compensated elasticities

<table>
<thead>
<tr>
<th></th>
<th>Fresh milk</th>
<th>Pasteurized milk</th>
<th>Milk powder</th>
<th>Infant milk powder</th>
<th>Sterilized milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh milk</td>
<td>-0.4428</td>
<td>0.6281</td>
<td>0.5844</td>
<td>0.6151</td>
<td>0.5746</td>
</tr>
<tr>
<td>Pasteurized milk</td>
<td>0.2613</td>
<td>-0.8395</td>
<td>0.2433</td>
<td>0.2602</td>
<td>0.2531</td>
</tr>
<tr>
<td>Milk powder</td>
<td>0.9531</td>
<td>0.9540</td>
<td>-0.0884</td>
<td>1.0427</td>
<td>0.9532</td>
</tr>
<tr>
<td>Infant milk powder</td>
<td>0.6889</td>
<td>0.7007</td>
<td>0.7161</td>
<td>-0.4693</td>
<td>0.6694</td>
</tr>
<tr>
<td>Sterilized milk</td>
<td>0.2939</td>
<td>0.3113</td>
<td>0.2990</td>
<td>0.3057</td>
<td>-0.6958</td>
</tr>
</tbody>
</table>

Note: \( \varepsilon_{ij} \): diagonal values = own price elasticities, off diagonal values = cross price elasticities
IV. CONCLUSIONS AND RECOMMENDATIONS

The demand for dairy products which are more often consumed by Sri Lankans in the form of liquid or powder was analyzed by employing the LA/AIDS, while paying the particular attention to the zero expenditure problem. The demographic factors which influence the buying decision of these milk products were captured through a Probit regression.

Among the demographic factors we considered, consumption choice of most of the dairy produce will be decisively affected from presence of young children and prevalence of blood pressure. Nevertheless, preferences across households to purchase milk products will be insignificantly influenced by the area, household size, gender of the household head, education level, existence of heart diseases and diabetes.

As infant milk powder which is more preferred by the households where young children are present, being price elastic, government should be more careful when establishing policies in order to ensure adequate nutritional status of the younger generation in Sri Lanka.

Furthermore, all dairy products except milk powder are quite responsive to their own prices, while pasteurized milk and sterilized milk respond similarly for the income variations as well. However, demand for dairy products will be more influenced by price related policies than income oriented policies.

Being a necessity and a price inelastic commodity, milk powder holds the most prominent choice among all other alternatives. As most of the powdered milk available in the local market is being imported; any restriction would massively affect the demand for milk powder. Therefore, any action imposed on powdered milk will have a significant impact on Sri Lankans’ dietary choices with respect to the dairy products. Additionally, various research studies should be conducted to capture consumers’ needs and wants properly and also, domestic production should be encouraged in order to maintain a continuous supply.

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Poverty and Perception: Driving Sri Lankan Children’s Homes at Multiple Levels

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Abstract — In Sri Lanka, many children are housed in institutions for economic, social and cultural reasons, as well as the impacts of the civil war and global climatic change. Children’s homes house almost 20,000 children, a huge population who have been denied basic human rights by being deprived of parental care and labelled orphaned, abandoned or destitute. These figures are disturbing in a multi-religious and diversely cultured state where moral rhetoric abounds, but concerns need to be translated into practice.

This participatory action research was carried out across all nine provinces in Sri Lanka, involving policy makers and service providers responsible for children without parental care. All commissioners of the Provincial Departments of Probation and Child Care Services were interviewed to ascertain their role in the policy making process. Thirty managers from different children’s homes were interviewed concerning their service provision. All 298 probation officers, 287 child rights promotion officers, and matrons and wardens of all 416 children’s homes were included in a questionnaire census approach. Of these, approximately half responded. The recruitment of these groups as participants for the study was based on the aim of using their feedback to produce a set of guidelines for the process of policy making and governance of children’s homes. The responses to the questionnaires and the narratives of interviews were analysed on the basis of the UN Guidelines for the Alternative Care of Children and the General Standards for promoting the quality of services in voluntary children’s homes in Sri Lanka. The answers were separated into several themes and rated to identify the core themes.

This participatory action research has identified many issues of policy implication and service provision across agencies charged with care of children. This paper investigates the impacts of socio-economic and cultural environments on children both before and during their institutionalization.

Keywords: Participatory Action Research, children without parental care, agencies.

I. INTRODUCTION

This paper is titled “Poverty and Perception: driving Sri Lankan children’s homes at multiple levels”. “Multiple levels” means the level of the service user (the child & their family) and the level of the management of the children’s home.

Roccella (2007) states that “Institutional care is at present the most common – or, rather, the almost sole – solution for children deprived of parental care in Sri Lanka”. The direct impact of ‘poverty’ and/or the ‘effects of poverty’ have been identified as the principal cause of a child’s entry into institutional care system (Save the Children, 2005; Roccella, 2007).

Roccella (2007) also reveals that the extreme poverty of some households (approximately 50 per cent of the total population of the institutionalized children) leads to the institutionalisation of children by their immediate or extended family. In fact in Sri Lanka, the majority of children in institutional care are there due to the direct and indirect effects of poverty. These arguments well suits with the empirical findings of this participatory action research (PAR).

Taking the empirical and secondary findings into consideration, this paper discusses two aspects of institutional care of children in Sri Lanka. Firstly, it reveals how the economic factor has affected children’s institutionalization. Subsequently, this paper identifies how peoples’ social and cultural perspectives impact on children and their rights during institutionalization.
II. OBJECTIVES

This paper addresses two research questions of the PAR. The first section, “Poverty drives the institutionalisation of children” analyses secondary and empirical findings asking the question “How can we prevent children being institutionalized and sustain their lives in their natural birth environments?” The second section on “Poverty or its perception drives the management of children’s homes” attempts to identify some of the human rights issues of children’s homes. It analyses two case studies provided by service providers and addresses the specific question “How can we safeguard the human rights of children in institutional care?” (Ariyadasa, 2013).

III. METHODOLOGY

This research is characterised by the strong involvement of members of the agencies that are responsible for institutional care of children, identifying it as Participatory Action Research (Whyte, 1991). Whyte et al. (1989) explain that “In participatory action research, some of the people in the organization or community under study participate actively with the professional researcher throughout the research process from the initial design to the final presentation of results and discussion of their action implications. PAR thus contrasts sharply with the conventional model of pure research, in which members of organizations and communities are related as passive subjects, with some of them participating only to the extent of authorizing the project, being its subjects, and receiving the results”.

The research subjects of this PAR are institutionalized children. However, there is not enough information available about them directly. Therefore, this PAR uses expert consultation as sources of data by interviewing policy makers and service providers responsible for institutional care of children. Thus, this PAR also uses exploratory research methods. According to Sarantakos (1998) exploratory Research aims at explaining social relations or events, advancing knowledge about the structure, process and nature of social events, linking factors and elements of issues into general statements and building, testing or revising a theory.

Exploration is a central element of qualitative research and has been useful for developing an accurate picture of the research subjects of this PAR. “This type of research refers to a number of methodological approaches, based on diverse theoretical principles, employing methods of data collection and analysis that are non-quantitative, and aiming towards exploration of social relations, and describes reality as experienced by the respondents” (ibid). Nevertheless, this research largely employs methods of data collection and analysis that are non-quantitative aims for exploration of social relations and describes reality as explained by the respondents. Furthermore, this PAR has collected questionnaire data through a quantitative research approach to assist the evaluation of qualitative data using statistical analysis.

Thus in summary, this PAR largely employs qualitative investigations to manipulate the information collected during the study in order to assess and evaluate the findings and arrive at some valid, reasonable and relevant conclusions. In-depth and narrative interviews have been employed for data collection and thus, the responses of the respondents are recorded on papers and subsequently studied and analysed.

IV. POVERTY DRIVES THE INSTITUTIONALIZATION OF CHILDREN

This section addresses two significant causes of child institutionalisation. Firstly, ‘Poverty as a direct reason for institutionalization’ is discussed against UN Guidelines. Secondly, ‘Parents’ migration for working abroad’ has been analysed as an adverse effect of poverty that has led to children’s institutionalisation.

A. Poverty as a direct reason for institutionalization

The UN Guidelines state that “Financial and material poverty, or conditions directly and uniquely imputable to such poverty, should never be the only justification for the removal of a child from parental care, for receiving a child into alternative care, or for preventing his/her reintegration, but should be seen as a signal for the need to provide appropriate support to the family” (UN 2010). Thus, empirical and secondary data which indicates poverty as a major reason for the majority of children in residential care cannot be justified in terms of the policies outlined in the UN Guidelines. Consequently, the UN Guidelines have influenced
UNICEF’s role to advocate for alternative remedies for children:

1. Whose homes don’t or can’t provide adequate care and support and,
2. Whose parents are desperate to provide their children with opportunities they themselves simply can’t provide.

Given that the best possible environment for children is generally with their families, i.e. to try to prevent children being separated from their homes in the first place. Thus, the preferred solution to the first situation according to UNICEF’s experience is simple and cost-effective support provided in a timely fashion to households. It may well reduce the separation of children from their families and it will further encourage children’s re-integration with their families.

This PAR demonstrates that, on some occasions, parents voluntarily request institutionalization of their child. The UN Guidelines insist that separation initiated by the child’s parents should be prevented (UN 2010). It is necessary to ensure that all households have access to basic food and medical supplies, education, limit the residential care options and restrict their use to those situations where it is absolutely necessary.

In cases where families are incapable of taking proper care of children as described in the second situation, the preferred solution in UNICEF’s experience is the introduction of the next best thing to family care, i.e. the networks of foster families. This is in accord with the UN Guidelines paragraphs 118 to 122 (UN 2010). UNICEF further suggests that additional support from the State to these foster families can form the backbone of an alternative care system for children (UNICEF, 2012). For instance, this system is practiced in South Australia (S.A.). A family which agrees to host a child is regularly acknowledged financially through the relevant foster care agency which is financially backed by the S.A. State government (Source: PAR 2013 by the author, Discussion with a foster care agency).

South Australia no longer runs children’s homes as an alternative care for children deprived of parental care. The alternative care system that S.A. has recognized as best next is the foster care system. Thus, S.A. is compliant with UN Guidelines which state that “the use of residential care should be limited to cases where such a setting is specifically appropriate, necessary and constructive for the individual child concerned and in his/her best interests” (UN 2010). Yet, the officials of foster care agencies stress that S.A. is in dire need of more foster care families to satisfy the present requirement of children deprived of parental care. They say that “On most occasions, the child and the social worker have to stay in hotel rooms until they find a permanent care solution. Sometimes, the child travels to school for many weeks or months from the hotel!” (Source: PAR 2013 by the author, Discussion with a foster care agency).

The UN Guidelines state that “while recognizing that residential care facilities and family-based care complement each other in meeting the needs of children, where large residential care facilities (institutions) remain, alternatives should be developed in the context of an overall deinstitutionalization strategy, with precise goals and objectives, which will allow for their progressive elimination...” (UN 2010). Care provided in any non-family-based group setting, such as places of safety for emergency care, transit centres in emergency situations, and all other short- and long-term residential care facilities, including group homes represent residential care (ibid). In Sri Lanka the foster care system is hardly practiced and therefore, the alternative is mostly residential care.

Most of the residential care institutions house more than 25 children (Source: PAR 2012 by the author). Most institutions provide dormitory facilities. Children’s homes that house over 100 children are not uncommon. However, the UN Guidelines explain that “facilities providing residential care should be small and organized around the rights and needs of the child, in a setting as close as possible to a family or small group situation” (UN 2010).

B. An adverse effect of poverty: Seeking work as domestic workers abroad

Sri Lankan women commonly work as domestic labourers in Middle-Eastern countries to address the issue of household poverty in Sri Lanka. Basnayaka et al. (2012) explains that “Migration occurs for various reasons such as education, businesses, seeking refuge, training and employment. But the truth behind the migration of Sri Lankan women is mostly poverty and low economic status of salary in Sri Lanka.”
Furthermore, Save the Children (2005) indicates that well over 30% of children’s institutionalization has been due to a mother’s foreign employment.

My own experience as the manager of a children’s home, collected as meeting records over five years, highlights a common experience. The mother works abroad often leaves her children behind in her husband’s care. The deprivation of care is undesirable and cannot be replaced by her earnings, but this does provide a way to look after the children’s physical needs. Mostly this cash falls into the hands of the children’s father. The mother expects her husband to use this money in a sensible and efficient way such as feeding the children, material support for the schooling of the children, to address any health issues, savings and hopefully to maintain and furnish their house. These are the priorities that the mother wants to spend her earnings on. Although she expects that the money would bring comfort to her family, it often works in the opposite way. This money is a fortune to her husband. His lack of education on how to manage the money and various unethical practices such as addiction to drugs and/or alcohol, gambling and buying sexual favours simply consume every penny that his wife has sent to him.

Basnayake et al. (2012) describes this situation as such: “The majority of migrant women belong to disadvantaged communities where the traditional livelihoods are not viable. The reasons for migration are noted as being due to lack of access to regular and substantial income and the inability to bear the rising cost of living. In addition, some of the major aspirations of the migrant women were to build houses, collect dowry and to educate their children. Among the specific problems of the women that force them to migrate are high indebtedness, domestic violence and the alcohol addiction of spouses. Female headed households remain fair segment of the migration population. The complexity of the present day migration stream has intensified with distinctions between migrant workers, trainees, tourists, refugees and displaced persons becoming increasingly blurred. Migrants in this sense include both voluntary migrants and forced migrants” (Source: The IOM/United Nations World Migration Report 2010).

My own experience, and that of managers who I interviewed as part of this study, highlight a sad but not uncommon scenario. While the mother is working abroad, the family dynamics become even worse than the situation when the mother was at home. There was some kind of a hold and a voice to advocate the family business when the mother was at home despite their financial difficulties. A father may find loneliness without his wife is intense and may turn to drink or drugs. He further finds that the only thing that gives meaning to his life is her money. He may well fall into bad company which could jeopardise the children’s safety. School dropouts, starvation, insecurity, health issues and humiliation become daily burdens. Children become denied most of their fundamental rights.

This situation was expressed by a commissioner of provincial DPCCS as follows:

“After a mother leaves family behind for working abroad, the circumstances now pave the way for the children’s institutionalisation of that family. The school or the community who witness the family deterioration reports to the officials about the threat to these children from their father’s acts and behaviour. Or else, the father himself may want to have his children institutionalized so that he can engage in his wasteful ways. He contrives several reasons for such a request. He claims that his wife has gone abroad and he cannot go to work when the children are at home as it would be a significant risk to their security and safety. To justify his reason he may further claim that his wife does not send him any money and that he must find work for the children’s sake.”

There are no mechanisms within the system to prove that the father’s request is genuine. Thus, officials tend to approve his request and send the children into children’s homes. If the officials were to make a comprehensive research of documents and seek evidence from the different agencies and the neighbourhood, there is a distinct possibility that the appeal would be found to be false. The lack of coordination between governmental departments makes such attempts rare and ultimately the children are admitted to children’s homes. When children are institutionalized, the responsibility is removed from the father leaving him to behave in whatever the manner he chooses which often leads the family towards a devastating and catastrophic collapse.
Another commissioner’s comments on how the system needs changes to address this issue are as follows:

“In reality, the father could look after his family well from the money his wife sends, but many use the legal loopholes within the system to satisfy undesirable behaviours. When the children are in children’s homes the father does not have to spend money on their needs. The children’s home and the government provide enough for them. This encourages him to spend and waste his wife’s money. There is no proper tracking system to identify how much money his wife sends to him. The government recognises his poverty as a valid reason for child’s institutionalization. Therefore, when officials cannot trace a family’s income and if the parent’s request for institutionalization of their child under the poverty factor, the government accepts the parents request even though it may not be in the best interest of the child.”

V. POVERTY OR ITS PERCEPTION DRIVES THE MANAGEMENT OF CHILDREN’S HOMES

“The governance of children’s homes for vulnerable children in Sri Lanka has long been regarded as a social welfare activity rather than a social responsibility. For this reason, it has led to the existence of many children’s homes lacking even the basic amenities and a few homes with extraordinary infrastructure and a far higher standard of amenities” (Rocella 2007). In line with this statement, firstly the socio-economic and cultural perspectives of the tradition of ‘Dane’ were discussed between policy makers and service providers. The word Dane is largely used when giving ‘alms’ to monks in the Buddhist culture. The charitable giving of money, food, or goods to people in need is also referred to as Dane.

Secondly, the paradox of relative and absolute poverty with regard to the tradition of Dane and the peoples’ attitudes towards the governance of children’s homes is discussed using two case studies provided by service providers.

A. The tradition of Dane: Socio-economic and cultural perspectives

Many Sri Lankans believe that the tradition of almsgiving to children homes helps one to achieve a better future in this life and to create an even better one in the next. This is the belief of the Buddhist and Hindu religions which represents over 85% of Sri Lanka’s population. There are local and foreign individuals and some companies who assist children homes by providing or funding meals and/or materials. For their contribution, they choose their own birthdays or any other memorable day to celebrate it at the children’s home. This tradition has continued over generations and many children homes have printed applications to promote this custom. This is called ‘Dane’. This concept of Dane was researched in this study by keeping a special position in the research questions to explore the positive and negative aspects of this custom in terms of the institutionalized children and their human rights.

According to service providers, whatever the belief of the public, the positive aspect of Dane is that it eases the ongoing maintenance cost of a children’s home. The number of people gathering to undertake an almsgiving varies from a few family members to a larger community group. Thus, it provides institutionalized children with a chance to mix with the public. Six policy makers out of nine consider the chance of mixing with the public as a result of ‘Dane’ is a positive aspect. The policy makers, who see it as positive, believe that by keeping a children’s home with easy access to the public, it protects the children from abuse. They believe that the public can observe the children’s well-being and report to officials if they find any misbehaviour of the staff within the homes. This is based on the assumption that those who observe Dane do so for altruistic reasons. Furthermore, the policy makers suggest that by keeping a contact list of the public donors, the staff can record potential personal donors and possible routes for future support for socializing the children from their children’s homes. The vast numbers of people that can participate in Dane are often regarded as a nuisance for the daily timetable of the home. Three policy makers point out that the Dane is a huge process. It consumes vital time that can be utilized for the future prospects of the charges of the home in many aspects. After the meal donation, children have to sing songs and dance as a sign of gratitude for the generous thoughts of the public. Most of the time, while the public is around, children have to sacrifice their evening rest, recreational activities, school homework and sometimes most important extra classes” (Source: PAR 2012 by the author, Commissioners’ interviews, No. 6).
Another negative aspect of this tradition according to the policy makers and policy officers is that the public sees these institutionalized children as helpless and hopeless. They have recognised that the public have naturally become donors to these institutions and provide facilities in terms of materials (food, clothes, books, stationery etc.) to satisfy children’s physical needs rather than satisfying their psychological needs such as recognition, respect, belonging, achievements and confidence. However, policy makers urge that care should be taken when organizing a Dane. There is a real danger that children may come to believe that this is their fate – to be fed and supported by others and they have to live with it. This makes them more vulnerable as it does not encourage them to develop their own potential and stand with a positive attitude to confront the challenges in their lives (Source: PAR 2012, summary of the answers from commissioners).

Six service providers out of the thirty interviewed point out that when organizing a Dane, the public tends to look for children’s homes that have fewer facilities and more desperate children so they, the donors, earn more virtues. This attitude is highly contentious. When the staff of a children’s home maximise infrastructure and keep their charges happy by utilizing funds properly and promptly, it adversely affects the public donations. Well managed children’s homes from the general public’s perspective need no further support. Their decision for ‘Dane’ is mainly based on the infrastructure facilities at homes and the appearance of the children. These attitudes of the public inevitably lead the managers of some children’s homes to misuse public funds without utilizing them within the homes. Paradoxically, the public unwittingly encourages managers to showcase much less than regular/perfect homes and to keep the children in desperate conditions simply to attract more funding. This unfortunate paradox of relative and absolute need is well illustrated by the following two case studies.

B. Paradox of relative and absolute need

1) Case study 1: One manager of an ‘A’ graded children’s home explained this paradox by using his example of ‘two different beggars’ as follows:

“Suppose you are travelling in a bus with a friend. At one station, two female beggars get into the bus and start begging simultaneously. One woman is looking dirty and unkempt while holding an infant with a running nose and unattended wounds. The other woman is wearing relatively clean clothes and her baby is hygienically attended. To which beggar would you offer some money? Isn’t that the terrible looking beggar with the child likely to get your attention? Wouldn’t that be the reaction of most of the other passengers as well? After the women left the bus, wouldn’t you comment with your friend justifying your action and that of the others, saying that there is no need to offer money to a cleanly dressed woman with a healthy looking baby? His argument is quite obvious as the other woman is the one that appears in every manner to deserve support from the general public. We accept the truth as what we see it, but the reality could be a totally different story” (Source: PAR 2012 by the author, Managers’ interviews No. 1).

When asked why he thought that the reality could be a different story, the manager justified his argument with:

“The woman may not wear clean clothes because clean clothes look odd for a beggar. She does not attend the running nose or the wounds of the baby, because these characteristics influence the passengers to offer money to the one they perceive as needing most. In reality she should be able to wear clean and tidy clothes from her earnings as a beggar and of course attend her baby, but she does not do so. She may be uneducated but she is well versed in the peoples’ attitudes. She knows that clean clothes or healthy looking babies either reduce her earnings or bring no income at all. That is why we hardly see well-dressed beggars on the streets. Toned or deliberately dirty and/or dusty, rotten clothes are beggars uniform. Miserable faces and unattended wounds are their ornaments. Disabilities are their unveiled blessings”.

In this description the manager sees the issue of relative and absolute need through the common eye and explains the current situation of the general public’s attitude towards the children’s homes. Public’s attitude is that the children’s homes are usually poorly managed and difficult to run. Furthermore, the public have very rarely experienced thriving, well-educated, properly behaved and well-nourished children in institutional care. They presume that institutionalized children are orphans, abandoned and destitute as categorised by DPCCS (2010). Thus, the public is reluctant to contribute to children’s homes that are
well managed and where the residential children showcase similar life styles to those children living in natural birth environments.

2) Case study 2: One service provider explains his experience as follows:

“When I decided to take the risk of managing and running an orphanage, I was quite sure about the Dane from public donors. Especially the meal donations, because I knew about a few children’s home where you cannot easily reserve a date for a meal donation. The meals for most of the year have been reserved in those children’s homes. Therefore, I relied upon public donations for meal costs even before I started my orphanage. I thought, once started, within two to three years, I would not need to prepare many meals in my children’s home and I could reduce the number of cooks from two to one. I was totally mistaken. It has been six years since the inception of my home, but I have not been able to cut down even 25% of the meal cost from the public funding” (Source: PAR 2012 by the author, Managers’ interviews No. 8).

According to this manager, the public’s attitude towards the children’s homes is an issue that has to be addressed immediately. He explains the reasons why he thinks meal donations are lacking in his children’s home as follows:

“I constructed the children’s home from the generous funding of an overseas organization. It consists of most of the key infrastructure facilities that a children’s home must have. We have sufficient staff members and a manageable number of children. It is situated in a rural village and the children go to the village school. Our children wear relatively good clothes and eat relatively good meals compared with the children from the village. That is one reason why we receive only a few meal donations from the village where the children’s home is situated. The other reason is a very crucial one. It is known that the donors who come from distant areas rarely continue their donations. When they see the infrastructure and the satisfied faces of the institutionalized children, they think that our children’s home is a well-off one and needs no constant support. We need their financial and material support to keep the ongoing functioning of the home as good as it is now. Many, who promised regular donations, withdraw them and transfer them to other children’s home, where they find less facilities and miserable faces of charges. Public does not understand that some managements of other children’s homes pretend that they lack facilities and use children to showcase the varying needs of the home. Although I am still struggling with financing strategies and process for my children’s home, I cannot misuse children in my care to attract public funding”.

The manager in case study 1 tries to compare the life of a beggar with the characteristics of children’s home. It is well expressed as both the above parties (beggar and children’s home) depended upon public donations. The manager in case study 2 tries to explain that the good appearance of a children’s home and a well-kept children paradoxically cause the public to think that no funds are needed.

VI. CONCLUSION

The existing system for the alternative care of children who are denied parental care Sri Lanka, does not satisfy the policies expressed in the UN Guidelines. Specifically, the common use of children’s homes rather than a family environment for alternative care is in contravention of these guidelines.

Poverty and effects of poverty have significantly contributed to children’s institutionalization in Sri Lanka. The government should regulate a system for children’s well-being from the inception of the story of parents’ decisions to work abroad. This can lead to an agreement between the parents and the government to decide who is going to take over the well-being of the child while the parent works abroad. This type of mechanism avoids unnecessary institutionalization and maintains family integrity.

Policy makers and service providers describe that the custom of Dane has both positive and negative aspects. Policy makers keen to identify negative aspects as they assume that Dane could be interpreted as teaching students to think in terms of welfare and dependency rather than thinking about their own rights and responsibilities. However, service providers find Dane as positive in some aspects, particularly as it eases the running cost of the children’s homes.

Socio-economic and cultural perspectives of Sri Lankan society have influenced the management of children’s homes and the way the human rights of
the institutionalized children have been translated into practice. Thus, institutionalized children are at risk as a result of a range of socio-economic factors. It has been a difficult task to erase the attitude of society that these vulnerable children ought not to be treated as ‘welfare cases’; they have rights. While acknowledging the thoughts and deeds of the public as donors, governance practices of homes should be adapted to minimize the negative impacts on the rights of children and their needs.

Since many children’s homes in Sri Lanka are funded by donations from the public, there is an urgent need for open debate to convince the public donors of the relative and absolute reality of how their funds should be utilized by the children’s homes. Furthermore, service providers should encourage and provide access for the general public to participate (to some degree) in management to maximise the public awareness of how their funds being utilised. They should be convinced that their continuous support assists not only the initial generation of facilities but also to keep these facilities functioning. Thus, they should continuously support the home to maintain its status quo.

The public should assist social welfare organisations that run children’s homes with no personal agenda, but as a social responsibility to support institutionalized children. This helps the children to achieve their full potential with upward mobility, and to integrate into society as effective, productive and fully rounded citizens where they can also contribute positively to the social and economic development of Sri Lanka.

ACKNOWLEDGEMENT
This research is funded by the Australian Government’s Endeavour Scholarships and Fellowships. The ideas and philosophies presented in this paper draw on the expertise of my supervisors; Prof. Janet McIntyre, Dr Helen McLaren and Dr Leonie Solomons. Insights and feedback offered by Dr Greg Collings were invaluable. The specific comments from the anonymous reviewers also helped immensely to improve the manuscript. The author would like to acknowledge their contributions.

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BIOGRAPHY OF THE AUTHOR

Eshantha Ariyadasa is currently studying for his PhD at Flinders University, South Australia. Through his research he plans to create policy proposals which address the issues of children’s rights and their needs within children’s homes in Sri Lanka. He participated in the World Conference of the International Society for the System Scientists in Vietnam in 2013. Eshantha pioneered the Sputnik International Organization to promote world peace through languages, sports and cultural education. He is the founder of Sputnik Girls’ Children’s Home in Sri Lanka.
The Role of Education on Agricultural Productivity in Sri Lanka

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Abstract- Rural area is a geographic area located outside cities and towns. In order to have a long term sustainability in rural sector, education plays a major role by empowering farmers with right direction, right thinking patterns, right decision making ability and right choices. Hence the education would be a sustainable strategy to uplift the rural sector with agricultural development. However in order to enhance the productivity of the rural sector, the role of education is crucial. The pecuniary and non-pecuniary benefits of the education have impacts on farmers for their shorter and long-term pricing efficiency, scale efficiency, allocative efficiency and technical efficiency to increase the agricultural productivity. The objective of the study is to examine the relationship of education with the productivity's sample of 409 families were taken and semi structured questionnaire was used to collect the data. As a data analytical tool, Structural equation method was used with the support of SPSS AMOS (Version 21).

However study concludes that the household with no schooling has an inverse relationship with the productivity while the educational level of primary level and secondary level have a positive influence on the Total Factor Productivity of farming and Total Factor Productivity of non-farming. In addition to that the study indicates that the extension services, social capital and other informal and non-formal education streams also influence on agricultural productivity positively.

Keywords: human development, labour productivity, agricultural productivity, education, human capital

I. INTRODUCTION

Agriculture and rural sector is inseparable; whereas education, productivity and development are also inseparable. Therefore when it turns to agricultural development, as per Bhati (1995), there is a correlation between agricultural productivity and education because, the level of education works as source of agricultural transmission or innovation. Innovation, productivity and efficiency are by-products of education of which should be used as a source to generate income aspects in the rural sector (Fuglie (2009). Not only it boosts the income level due to innovation, but also can enjoy cost advantage too due to farmer’s choice of best combination of products (Hemachandra and Kodithuwakku 2006). Therefore as Education makes a man wholesome with abilities, skills and knowledge to make a man developed is of which is conceptually known as ‘human development’. Human development can have a great impact on productivity. Hence this study try to elaborate how education as a source of human capital develop agricultural productivity of farming and non-farming
management and as impact of education on output management. Therefore at the end it meets the impact of education on productivity which comes from many perspectives such as better decision making upon; scale efficiency, pricing efficiency, allocative efficiency, pricing efficiency and finally economic efficiency.

B Research Objective
The main objective of the study is to examine the role of education as a driving force to effect on agricultural productivity in Sri Lanka.

II. EMPIRICAL REVIEWS
This section explains the empirical studies done on how education has been viewed by the empirical studies as the capability enhancement tools to ensure better agricultural productivity on farm and non-farm.

Oxaal (1997) indicates based on human capital theory that education has ability to acquire better skills in order to achieve higher productivity than those who do not have education. Hence, education can make people to be productive; to enhance their learn-by-doing ability; to enhance their productive thinking and etc. This goes faster pace than for those with less or no education. The 'learning-by-doing ability' and cognitive skills that a learner receives from a better education would have an impact on human development to bring the productivity and to develop managerial skill of which would be important in material management in agriculture, crop management, diversification management and non-agricultural production.

However regarding farmer’s productivity as literature support that more than formal education, (number of year in school) the other two forms of education are important. As an example age, experience, training & etc. are in major. Although the study indicates that there is a positive relationship between education and productivity, the return to school of the study is higher than other studies. Because the study reveal that return to schooling is around 3.67% but as per Jamison & Lan (1982) (As cited by Onphandala (2009), it is around 2.87%which is below the normal trends. However, when higher education achievement reached by the farmers; the higher the return to productivity they gained. But this study does not show a higher education but still a higher return to productivity is there which need to be revisited. As Onphandala (2009) indicates that age of the farmer show the negative impact on the productivity and efficiency. But Edirisinghe et al (2008) indicates that 10% increase of age, increase the efficiency by 3.81%.

Fuglie (2009) in his study on ‘Sources of growth in Indonesian agriculture’, expected see the contribution of the spread of rural education and literacy to agricultural growth. It refers both agricultural productivity and education offers growth. Usually, in the productivity concept, there are two components such as Input and Output. However, in the ‘inputs’ category in the productivity, formal education plays a considerable role in determining a better productivity. Because education can provides a necessary knowledge to select the best and feasible input mixture more than with no education.

In the end Fuglie (2009) articulate that there is a link between farmer education and agricultural productivity in developing countries; and hence he concludes that the contribution of improvements in farmer education/human capital has a sustained contribution to agricultural productivity growth. Even Wong (2012) in his research on ‘Effects of education on Sub Saharan Africa’ also supported with Fuglies (2005) views. He indicates that education is directly impact on labour quality before other factors are affected. Even Bhati (1995) too highlights that, ‘agricultural productivity and use of modern inputs are positively related with educational level of farm workers’. In addition to that, Bhati (1995) concludes his study that ‘there is a positive relationship between education and agricultural productivity’.

Asadullah & Rahman (2009) in their study on ‘Farm productivity and efficiency in rural Bangladesh:The role of education revisited’ have aimed to see the role of education in farm production in Bangladesh. The research concludes with that the education first ensures the efficiency of the farm operation and then impact on income, output and productivity. And the impact of neighbor’s education is found to be insignificant to farmer’s productivity and income. However, the study focus additionally that the household head’s primary and secondary education over and above zero years of education has a significant impact on productivity and household heads who complete secondary schooling also enjoy significant efficiency. But the contribution for the
productivity status for those who have completed tertiary education is minimal.

The study basically highlights that productivity is significantly influenced by primary education but not by secondary and tertiary education. This is not what Pudasaini (1983), Yang (1997), Onphanhdala, P. (2009) and Tabari & Reza (2012) have disclosed. Without taking any of such categories, they concluded that there is an impact of education on productivity or farming. Although Asadullah & Rahman (2009) articulates that secondary education and tertiary education do not show a considerable significance, Roy (1996) sees it in different angle. Because efficiency in enhancing managerial ability and efficiency in resource management and etc would come due to agricultural productivity, not due to achievement from primary level education but from higher level educational achievement. As Roy (1996) refers, the innovative ways of thinking such as declining soil fertility and depletion of soil micro nutrients, declining efficiency in use of fertilizer and other inputs, irrigation water efficiency, efficiency delivery system, change in the pest complex and increasing intensity of pest outbreaks, seed quality, varietal replacement at the farm level (varietal replacement represents the pace at which farmers switch over to newer varieties to capitalize on the successive incremental gain in yield potential) all of these changes would take place due to enrichment of education (Roy, 1996). However the overall conclusion made by Asadullah & Rahman (2009) is that the education first ensures the efficiency of the farm operation and then impact on income, output and productivity. And the impact of neighbor’s education is found to be insignificant to farmer’s productivity and income.

Concluding, Kiresuri et al (2010) indicates that 10% increase of education could increase the productivity by 3.27%. On the other hand Januja et al (2011) recognized enrolment ratio to secondary education as an indicator of education showing 2.3682% or decrease of poverty due to 10% increase of such enrolment. Pudasaini (1983) recognize the importance of formal education and non-formal education separately in effect to rural and urban separately. The study indicated that due to 10% increase of education and extension services can effect on productivity by 0.22% and 2.12% respectively to rural sector while it is for the urban sector by 0.11% and 0.04% respectively. Edrisinghe et al (2008) refers that education, herd planning and veterinary attendance were recognized as formal and informal education aspects and indicates that 10% increase of education, herd planning and veterinary attendance decreases the inefficiency of production by 49.7%, 63.61% and 2.51% respectively. However the finding made by Lin et al (2001) is controversial as the study says that increase of education could results in increasing the poverty too.

Next Djomo (2012) recognize education and training separately and infer that 10% increase of such can increase productivity by 0.2% and 1.11% respectively. Umesh and Asogwa (2011) recognize education and extension programme separately to poverty with 0.013% and 0.015% of poverty reduction due to 10% increase of such education. Further Onphanhdala (2009) recognized that 0.716%, 1.9% and 2.5% increase of productivity occurs due 10% increase of primary, Lower secondary and higher secondary respectively.

Concluding the literature review, it appears that there is no considerable studies have been done regarding the impact of education agricultural productivity in Sri Lanka. And further, even in the education also most of the studies used only the formal education, not informal or non-formal education aspects. However the current study aims to use all threefold of education to see their impact upon Total Factor Productivity (TFP) to measure the pricing, scale and allocative efficiency of rural farmers in Sri Lanka.

III METHODOLOGY

A Introduction to methodology

The methodology consist of formulation of conceptual framework based on the research objectives and empirical reviews; formulation of empirical model based on conceptual framework and research objectives; justification of the sampling area, data and variables; data collection tools and data analysis.

B Development of Conceptual framework

However, as most of the studies concern that the productivity and capability are influenced by education or human capital; the impact of education on poverty through productivity and capability can be conceptually drawn as below in the Figure 1.1.
The above framework, Figure 1.1 shows that the Education (Formal, In-Formal and Non-Formal Education) would impact on one’s Productivity and Capability. However Non-Farm Productivity and Farm Productivity are influenced by each other reciprocally. Capability may make up the possibility of enhancing people’s employment opportunities of which at the end influence on agricultural productivity (Farm and Non-farm). Therefore it can be deducted that impact of education on their development comes through capability and productivity via Farm Productivity, Non-Farm Productivity. Farm activities are influenced by Non-Farm activities and even the Non-Farm activities also NOS (influenced by Farm Activities to effect on both reciprocally. Due to this reciprocal interrelation, it requires to apply structural equation model system to evaluate the relationship between poverty and related variables.

Formulation of the Model

As per the objective of the study to see how education impact agricultural productivity in Sri Lanka; the following equations are drawn. Hence as education goes to farm productivity and non-farm productivity as supported by the literature, the productivity is influenced by the variables such as education, credit availability, irrigation availability, size of the household, distance to market are commonly influencing on both farm productivity and non-farm productivity. However when it comes to farm productivity; even non-farm affairs and employment benefits/experiences also influential. Again when it comes to non-farm productivity, both farm affairs and employment benefits/experience makes matters. Based on these the following equation (1) and (2) are shown.

\[ TFP_{FM} = f(NOS, PRM, SEC, EXT, RADIO, GOV, EXP, SOCAP, DISTMKT, CRAVA, IRRAV, AGE, HHSIZE, FULEMP, LABOURING, TFP_{NFM}, ERR1) \]

\[ TFP_{NFM} = f(NOS, PRM, SEC, EXT, RADIO, SOCAP, EXP, LAND, TFP_{FM}, FULEMP, LABOURING, AGE, ERR2) \]

Both of the above equations try to see how far the three folds of education as Formal, Informal and Non-Formal, influence on farm and non-farm productivity. Formal Education comprise of No Schooling), PRM (Education up to Primary Education), SEC (Education up to Secondary and higher education). Non-Formal Education Indicates only EXT (Extensions Agricultural Services). However Informal education consists of RADIO (Having Radio), SOCAP (Impact of Social capital), EXP (Impact of Experience) and AGE (Age of the head of household).

Accordingly Equation (1) it explains that \( TFP_{FM} \) (Farm Productivity) is influenced by NOS (No Schooling), PRM (Primary Education), SEC (Secondary Education), EXT (Extension Contacts), RADIO (Availability of Radio), GOV (Membership of Govi\textsuperscript{2} Associations), EXP (Professional Experience), SOCAP (Level of Social capital), DISTMKT (Distance to Market), CRAVA (Credit Availability), IRRAV (Availability of Irrigation), AGE (Age of the head of the Household), HHSIZE (family Size), FULEMP (Full Employment), LABOURING (Laboring Jobs) and \( TFP_{NFM} \) (Non-Farm Productivity).

Again followed by the Equation (1), Equation (2) indicates that \( TFP_{NFM} \) (Non-Farm Productivity) is
affected by NOS (No Schooling), PRM (Primary Education), SEC (Secondary Education), EXT (Extension Contacts), RADIO (Availability of Radios), SOCAP (Level of Social Capital), EXP (Level of professional Experience), LAND (Land Size), TFP (Farm Productivity), FULEMP (Level of Full Employment), LABOURING (Level of Laboring Jobs) and AGE (Age of the head of the household). Here as most importantly, both TFP as an indicator of Farm income and TFP as the income of Non-farm Opportunities are influencing for each other reciprocally as a recursive way.

D Data and Variables
However, the following observed variables exogenous variables are also used for the analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOS</td>
<td>Head of Households with no schoolings</td>
</tr>
<tr>
<td>PRM</td>
<td>Head of Households with primary education</td>
</tr>
<tr>
<td>SEC</td>
<td>Head of Households with secondary education</td>
</tr>
<tr>
<td>EXT</td>
<td>Extension contacts</td>
</tr>
<tr>
<td>EXP</td>
<td>Experience</td>
</tr>
<tr>
<td>GOV</td>
<td>Member in ‘Govi’ Organizations</td>
</tr>
<tr>
<td>RADIO</td>
<td>Availability of Radio services</td>
</tr>
<tr>
<td>SOCAP</td>
<td>Membership of the other Societies</td>
</tr>
<tr>
<td>SAMURDHI</td>
<td>Availability of safety net like ‘Samurdhi’ relief offered by the government</td>
</tr>
<tr>
<td>DEPRATIO</td>
<td>Number of dependent those who are over 60 years of age and those who are lower 14 years of age</td>
</tr>
<tr>
<td>IRRAV</td>
<td>Availability of Irrigation facilities</td>
</tr>
<tr>
<td>CRAV</td>
<td>Credit Availability</td>
</tr>
</tbody>
</table>

Further the following observed endogenous variables are used in the model.

In addition to that even unobserved but exogenous variables are also there in the empirical model as error terms

<table>
<thead>
<tr>
<th>Error Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERR1</td>
<td>Error term for Total Factor Productivity</td>
</tr>
<tr>
<td>ERR2</td>
<td>Error term for Non-Farm Income</td>
</tr>
</tbody>
</table>

TFP: Farm Productivity
Productivity measures the effectiveness and efficiency of using input resources to optimize output resources. Here current study plans to use both full productivity measures and partial productivity measures. Farm Total Factor Productivity (TFP) becomes the full productivity measures while Seed Productivity and Land Productivity as productivity measures becomes the partial productivity measures.

However Total Factor Productivity is used for the estimation of empirical model. Total Factor Productivity is a measure of how efficiently all cost of inputs such as Capital, Fertilizer, Seeds, Labour, Land Rent, Hired Labour and etc. are used to generate better level of output of a single crop or from multiple crops. There are number of number of reason why current study selects the total factor productivity instead of partial productivity measures. Reason number one is that the sample area consists of farmers with multiple crops rather than single crop. Second reason is that the education has an impact on several dimensions such as pricing efficiency, labour efficiency, cost controlling efficiency, seed and land optimizing efficiency, efficiency in optimizing the benefits by seasons and etc. In order to make people think more on these aspects, they need education. Further education foster farmers to be vigilant in all aspects of farming not on single aspects. Due to all these reasons, the current study measure the total factor productivity instead of partial productivity to estimate the model.

Christensen and Jorgenson (1985), has introduced the basic formula to calculate the Total Factor Productivity formula as shown below to assess it.

\[
\ln(TFP_{t}/TFP_{t-1}) = 1/2 \sum(R_{t}+R_{t-1}) \ln(Y_{t}/Y_{t-1}) - 1/2 \sum(S_{t}+S_{t-1}) \ln(X_{t}/X_{t-1})
\]

Where;
\(Y_i\) are output indexes, \(X_j\) are input indexes, \(R_i\) are output revenue shares and \(S_j\) are input cost shares. But as Fuglie (2009) has rearranged this formula by incorporating both overall input cost and overall output income. Hence as per him, the total factor productivity is a ratio between output income in terms of input cost. Based on that he has developed his formula as follows;

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFP</td>
<td>Total Factor Productivity</td>
</tr>
<tr>
<td>NFM</td>
<td>Non-Farm income</td>
</tr>
<tr>
<td>LABOURING</td>
<td>Earning from laboring jobs</td>
</tr>
<tr>
<td>FULEMP</td>
<td>Earning from full employments</td>
</tr>
<tr>
<td>POVERTY</td>
<td>Whether a household is poor or not</td>
</tr>
</tbody>
</table>
Where; $Y$ indicates the total output income and $X$ indicates the overall input cost.

However, the formula introduced by Christensen and Jorgenson (1985) has periodic comparison. Hence the current study removes the periodic comparison as the previous year’s figures are not available and as such the figures for the period of $(t-1)$ is removed and exclude even the log function also and develop the formula again as below:

$$\text{TFP}_i = \frac{\sum R_i Y_i}{\sum S_j X_j}$$

$Y_i$ indicates the output indexes; $X_j$ indicates the input indexes; and $R_i$ shows the output revenue shares and $S_j$ points out the input cost shares.

The formula introduced by Christensen and Jorgenson (1985) to Total Factor Productivity is amended as below for the current study.

$$\text{TFP} = \frac{\sum (RM + RP + RV)}{\sum (SM + SP + SV)}$$

Where;

- $RM$ Revenue share of Maize
- $RP$ Revenue share of Paddy
- $RV$ Revenue share of Vegetable
- $SM$ Cost share of Maize
- $SP$ Cost share of Paddy
- $SV$ Cost share of Vegetable

Even Fuglie (2009) also has measured the productivity in a similar base by dividing the total income by the total cost spent ($Y/X$; where $Y$ indicates the Total Revenue and $X$ indicates the Total Cost; P.226).

Total income is by multiplying the total quantity of output harvested (sold, consumed and stock in hand) by the average market price. Total cost is taken by summing the cost of; labour, fertilizer, land rent, chemicals, seeds, harvesting expenses and etc. this is in consistent with Fuglie (2009) and Djomo et al (2012).

**Data and indicators:**

- Total Factor Productivity
  \[ \frac{\sum (RM + RP + RV)}{\sum (MC + PC + VC)} \]
- Seed Productivity : Total
- Household Output/Total Quantity of Seeds
- Land Productivity : Total
- Household Output/Total Land area Used

**TFP^{NFM}: Non-Farm Productivity**

Non-farm Productivity measures how efficiently input varieties of non-farm options are used to generate maximum output. Here also like the farm Productivity, TFP is calculated using the modified equation as shown below

$$\text{TFP}^{NFM} = \frac{\sum Y_i}{\sum X_i}$$

Where; $Y = \text{Income from multiple sources of Non-Farm Options}$

$X = \text{Cost for multiple sources Non-Farm operations}$

This formula is moreover same as formula developed by Fuglie (2009) and Djomo et al (2012). However the monthly non-farm income and its cost are directly taken on the survey and it is verified using indirect questions.

Data and variables with Indicators
### Table 1.0 Data and variables with indicators

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measurement Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>Age of head of Household</td>
</tr>
<tr>
<td>NOS</td>
<td>Education of Head of HH: No schooling- School Attended =0</td>
</tr>
<tr>
<td>PRM</td>
<td>Education of Head of HH: Education up to Grade 5</td>
</tr>
<tr>
<td>SEC</td>
<td>Education of Head of HH: Education up to Graduate level from Grade 6</td>
</tr>
<tr>
<td>EXT</td>
<td>Agricultural Extension Services: Number of times agricultural officers are visited</td>
</tr>
<tr>
<td>EXP</td>
<td>Experience of the Head of HH: Years in service</td>
</tr>
<tr>
<td>SOCAP</td>
<td>Social capital: Number of Years in Societies and etc</td>
</tr>
<tr>
<td>IRRAV</td>
<td>Irrigation Availability; Yes=1, No=0</td>
</tr>
<tr>
<td>CRAV</td>
<td>Credit Availability; Yes=1, No=0</td>
</tr>
<tr>
<td>GOV</td>
<td>Membership of Farmer Association; Yes=1, No=0</td>
</tr>
<tr>
<td>RADIO</td>
<td>Radio Availability; Yes=1, No=0</td>
</tr>
<tr>
<td>DISTMKT</td>
<td>Distance to market by kilometers (approximated to 0.5km</td>
</tr>
<tr>
<td>LABOURING</td>
<td>Monthly wages of Head of HH</td>
</tr>
<tr>
<td>FULLEMP</td>
<td>Monthly salaries of Head of HH</td>
</tr>
</tbody>
</table>

**Sampling**

However the sampling method is planned to arranged in multi stage methods. The first stage is to identify the province where the appropriate sampling area is located. Then to decide which districts are suitable for the study, after that, it need to identify the DS divisions and to select GN divisions , then to select the households and finally to select sample unit; whether head of household or household.

Researcher intends to select 409 families in the sample area as per the calculation mad in the above Table 4.02. The numbers of households to be taken to sample is decided based on the population (Sri Lanka Census 2011) of each DS divisions. It is as per the following Table 1.1.

### Table 1.1 DS divisions and Districts to be taken as Sample

<table>
<thead>
<tr>
<th>SN</th>
<th>Poverty Rank (%)</th>
<th>Divisional Secretariat</th>
<th>Population (**)</th>
<th>Sample size (HH)</th>
<th>No of GND</th>
<th>Names of GND (Grama Niladari Divisions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Siyambalanduwa</td>
<td>M 53059</td>
<td>230</td>
<td>4</td>
<td>Kotiyagala, Athimole, Kadurugoda, Wattegama</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Rideemaliyadda</td>
<td>B 51435</td>
<td>36</td>
<td>2</td>
<td>Kirimatiya, Pahalayayagama</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Meegahakivula</td>
<td>B 19540</td>
<td>48</td>
<td>2</td>
<td>Karamatiya, Galahitiyawa</td>
</tr>
<tr>
<td>9</td>
<td>23</td>
<td>Haliela</td>
<td>B 90179</td>
<td>60</td>
<td>7</td>
<td>Weragama, Gawala, Hinnaramgolla, Jayasinghagama, Watabadda, Weragamakanda, Dehiwinna</td>
</tr>
<tr>
<td>17</td>
<td>65</td>
<td>Welimada</td>
<td>B 100434</td>
<td>35</td>
<td>6</td>
<td>Ella, Nugathalawa, Idemegama, Dimuthugama, Amunearawa, Kohilagolla</td>
</tr>
</tbody>
</table>

**Source:**
- ** Sri Lanka Census of Population and Housing 2011 (DCS)

M; Monaragala, B; Badulla
However the principle base of the selection of number of households in each GN division is depend on the guidance taken from the Grama Niladari and Samurdhi Officer.

F. Data Collection Tool
Semi-structured questionnaire method was widely used.

G. Data Analysis
Meanwhile as the way farm activities affect to non-farm activities, non-farm activities too effects on farm activities as recursive relationships. In parallel, employment remuneration too influence on both farm activities and non-farm activities. Therefore as the variables are interchangeably influence on the other variables as a recursive relationship, structural equation method is selected as the evaluating model. Even Demi, Coleman-Jensen and Snyder (2010), Pedro Flores-Jiménez, Oswaldo Morales-Matamoros, Ricardo Tejeida-Padilla (2011) and Robert Walker, Mark Tomlinson and Glenn William also have used the structural equation method on their studies to evaluate their recursive relationships. However the current study also uses the structural equation model to analyze the empirical data collected followed by the conceptual framework and empirical model. The method of estimate is the Maximum Likelihood (ML) Estimates because SPSS Amos doesn’t provide most accurate information form the alternative methods such as Generalized least squares method, Unweighted least squares method, Sale-free least squares method and Asymptotically distribution-free method. However ML gives consistent parameter estimates and as the calculation even for the bigger sample size is not difficult, ML is used here as the method of estimation.

However in order to find out the indirect relationships, indirect effects and the their significance and probability levels, the Bootrap Techniques which is a inbuilt technique with SPSS AMOS version 21 is used. Percentile Confidence Level of 95% and 90% Confidence Level in the Bootstrap Technique is used instead Bias-Corrected Confidence Level. Most of the studies on poverty studies used the structural equation method to analyses the research data.

H Model Fit
This study used the value of Chi-square ($\chi^2$), RMSEA, GFI and CFI value as criterion to examine the fit of the model.

IV DATA ANALYSIS
The following section covers the results of data analysis from 409 households.

A Model Fit Summary
In order to see the fitness of the model, the indexes such as Root Mean Square Residual
### Table – 1.3 Models Fit Summary

<table>
<thead>
<tr>
<th>Short Name</th>
<th>Name of the Model Fit Index</th>
<th>Default model (Present Study)</th>
<th>Saturated model (Norm/Standard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF</td>
<td>Degree of Freedom</td>
<td>135</td>
<td>0</td>
</tr>
<tr>
<td>P</td>
<td>Probability</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CMIN/DF</td>
<td>Root Mean Square Residual</td>
<td>3.3554</td>
<td>5</td>
</tr>
<tr>
<td>GFI</td>
<td>Goodness of Fit Index</td>
<td>0.9082</td>
<td>1</td>
</tr>
<tr>
<td>AGFI</td>
<td>Adjusted Goodness of fit Index</td>
<td>0.843</td>
<td>1</td>
</tr>
<tr>
<td>PGFI</td>
<td>Parsimony Goodness of Fit Index</td>
<td>0.5308</td>
<td>1</td>
</tr>
<tr>
<td>NFI</td>
<td>Normed Fit Index</td>
<td>0.8405</td>
<td>1</td>
</tr>
<tr>
<td>RFI</td>
<td>Relative Fit Index</td>
<td>0.7519</td>
<td>1</td>
</tr>
<tr>
<td>IFI</td>
<td>Incremental Fit Index</td>
<td>0.8824</td>
<td>1</td>
</tr>
<tr>
<td>TLI</td>
<td>Tucker-Lewis Coefficient Index</td>
<td>0.8119</td>
<td>1</td>
</tr>
<tr>
<td>CFI</td>
<td>Comparative Fit Index</td>
<td>0.8791</td>
<td>1</td>
</tr>
<tr>
<td>PRATIO</td>
<td>Parsimony Ratio</td>
<td>0.6429</td>
<td>0</td>
</tr>
<tr>
<td>PNFI</td>
<td>Parsimony adjustment to the NFI</td>
<td>0.5403</td>
<td>0</td>
</tr>
<tr>
<td>PCFI</td>
<td>Parsimony adjustment to the CFI</td>
<td>0.5651</td>
<td>0</td>
</tr>
<tr>
<td>RMSEA</td>
<td>Root Mean Square Error of Approximation</td>
<td>0.076</td>
<td></td>
</tr>
<tr>
<td>PCLOSE</td>
<td>P-Value</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Developed by the Researcher based on SPSS AMOS (21)

Demi, M., Coleman-Jensen, A., & Snyder, A. (2010) refer that their model is fitted due to the fact that the fitting data was healthy enough to indicate a good fitness of the model. Because (CMIN/DF=1.18; DF=132; p=0.07; CFI=0.99; RMSEA=0.02; Bollen-Stine bootstrap p=0.34), however they re-estimated the model to achieve a more parsimonious fit by adjustment with covariance. Then the final model is more parsimonious and fitted the model by (CMIN/DF=1.15; DF=139; P=0.11; CFI=0.99; RMSEA=0.02; Bollen-Stine bootstrap P=0.40; PCFI=0.80). As the study indicates that AMOS provides fit indices for parsimony goodness of fit (PCFI) that takes into account the number of parameters in a model. A value above 0.50 along with other appropriate fit indices indicates a parsimonious fit.

Further as per the study done by Pethiyagoda (2011), in their study on ‘Explaining fish consumption in Sri-Lanka The role of consideration set size, attitude, knowledge, convenience orientation, price consciousness, and variety seeking tendency’ indicates that their df = 144, p=.01; RMSEA = .038; GFI = .921; CFI = .960.

However, even the present study (after making adjustment for covariance) has fixed the model by 0.076 by RMSEA (which is better up to 0.08 as indicated by Browne and Cudeck (1993), and further they refer as a rule of thumb by indicating that RMSEA of about .05 or less would indicate a close fit of the model in relation to the degrees of freedom. This figure is based on subjective judgment. It cannot be regarded as infallible or correct, but it is more reasonable than the requirement of exact fit with the RMSEA = 0.0. Therefore it is the opinion that a value of about 0.08 or less for the RMSEA would indicate a reasonable error of approximation and would not want to employ a model with a RMSEA greater than 0.1 (SPSS AMOS Interpretation).

In case of GFI, it is 0.9082 (0.90 and above is considered as good fit). Further even CFI also has taken 0.8791 is a good indicators of fitness of the model. In addition to that even, CMIN/DF (Root Mean Square Residual) is 3.3554 which is less than 5, hence it consider as a indicators of fitness of the model. Further even, PCFI is also 0.5651 which is greater than 0.5 measures a fitness of the model. The other indexes also show very good healthy rates to shows that the model is extremely fit.
Further having ‘P’ 0 also indicates a good fitness to the model. Finally even Bollen-Stine bootstrap P=0.34, also shows a better indicators of fitness.

As most of the indexes shown in the above Table 6.36, used to evaluate the model’s fitness is close to 0.9, and the SPSS AMOS indicates that the minimum was achieved, it can be concluded that the model is fit enough to continue for the estimation.

However, in order to see the real gravity of education on rural poverty, it needs to look into P-Values of which represents in the ‘Sig.’ column in the Table 1.4. Column number four of the Table 1.4, indicates under the 95% confidence level interval, which variables are significant or not. If the significance value (Sig.) comes less than 5% or 0.05, it concludes that particular independent variable is more significant to change dependent variable.

Standardized Beta Coefficient as shown in the following data tables, column number two measures how far the changes in one unit of independent variable or mediating variable shown in the column number one in the table, would change the status of poverty (as an example) being the dependent variable. If the figure indicates a plus (+) mark, it points out there is a positive relationship with the dependent variable or if the figure indicates a minus (-) mark, it points out there is a negative/inverse relationship with the dependent variable.

B Impact of Education on Agricultural Productivity

However based on the coefficients of the independent variables as shown in the below Table 1.4, it can be seen that Professional Experience (EXP), extension contacts (EXT), Primary Education (PRM), Secondary Education (SEC), Availability of Land (LAND), Social Capital (SOCAP), Family Size (HHSIZE), Irrigation Availability (IRRAV), Availability of Radio (RADIO), Credit Availability (CRAV) and Membership of Govi Associations (GOV) positively correlates with the Total Factor (TFP) in order to stabilize farm income. However only the variable such as Professional Experience (EXP), Extension contacts (EXT), Primary Education (PRM), Secondary Education (SEC), Family Size (HHSIZE), Irrigation Availability (IRRAV) and Credit Availability (CRAV) are significantly and positively correlates with Farm Total Factor Productivity (TFPFM).
Table – 1.4. Impact of Education on Farm Productivity.

<table>
<thead>
<tr>
<th>Independent and Moderating variables</th>
<th>Standardized Coefficients</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>Std. err</td>
</tr>
<tr>
<td>AGE</td>
<td>-0.0489</td>
<td>0.0428</td>
</tr>
<tr>
<td>EXP</td>
<td>0.0877</td>
<td>0.0317</td>
</tr>
<tr>
<td>PRM</td>
<td>0.33</td>
<td>0.0705</td>
</tr>
<tr>
<td>SEC</td>
<td>0.2772</td>
<td>0.0949</td>
</tr>
<tr>
<td>NOS</td>
<td>-0.0273</td>
<td>0.0633</td>
</tr>
<tr>
<td>LAND</td>
<td>0.0502</td>
<td>0.037</td>
</tr>
<tr>
<td>SOCAP</td>
<td>0.045</td>
<td>0.0494</td>
</tr>
<tr>
<td>DISTMKT</td>
<td>-0.1038</td>
<td>0.0553</td>
</tr>
<tr>
<td>HHSIZE</td>
<td>0.0144</td>
<td>0.0317</td>
</tr>
<tr>
<td>IRRAV</td>
<td>0.4485</td>
<td>0.0511</td>
</tr>
<tr>
<td>FULEMP</td>
<td>-0.1843</td>
<td>0.0626</td>
</tr>
<tr>
<td>LABOURING</td>
<td>-0.0224</td>
<td>0.042</td>
</tr>
<tr>
<td>RADIO</td>
<td>0.043</td>
<td>0.0381</td>
</tr>
<tr>
<td>GOV</td>
<td>0.0456</td>
<td>0.0483</td>
</tr>
<tr>
<td>EXT</td>
<td>0.2256</td>
<td>0.0391</td>
</tr>
<tr>
<td>CRAV</td>
<td>0.1054</td>
<td>0.0336</td>
</tr>
<tr>
<td>NFM&lt;sup&gt;TFP&lt;/sup&gt;</td>
<td>-0.3482</td>
<td>0.0594</td>
</tr>
</tbody>
</table>

Dependent Variables: Farm Total Factor Productivity (TFP<sup>FM</sup>)
Source: Developed by the Researcher based on SPSS AMOS (21)

As justification, the educational (formal or informal or non-formal) variables such as Professional Experience (EXP), Extension contacts (EXT), Primary Education (PRM), Secondary Education (SEC), Social Capital (SOCAP), Availability of Radio (RADIO) and Membership of Govi Associations (GOV) would enhance the rural public decision making ability on the sphere of better crop selection, better seasons selection, ability of using complimentary resources, ability of making decision on economy of scales, ability of preserving soil productivity and etc. would enhance their productivity concern so as to increase the rural farmers farm income. This further supported even by Janvry et al (2005) who indicates that education is impact on non-farm option positively. In addition to that even Kurosaki et al (2006) also hypothesize that non-farm sector and productivity are affected by the overall education not primary or secondary or likewise.

On the other hand the variables such as Age of the head of the household (AGE), No schooling (NOS), Distance to Market (DISTMKT), Full Employment (FULEMP), Employment in Laboring Jobs (LABOURING) and Non-Farm Productivity (TFP<sup>NFM</sup>) show inverse relationships with the Total Factor Productivity (TFP) to reduce the importance of farm income as a source of poverty alleviation.

However not all variables are significant but Non-Farm Productivity (TFP<sup>NFM</sup>) and Full Employment (FULEMP) are significant in reducing Total factor Productivity (TFP). As justifications, when head of house hold is old, his active concern on decision making not be so active as he is young, therefore the age of the head of the household (AGE) is inversely relates with the Productivity. Further if a head of household is not going to school would limit his creative thinking, innovative ideas to make the things efficiency and effective, therefore ‘No schooling (NOS)’ variable has an inverse relationship with the productivity. Again when the distance to the market (DISTMKT) is higher mean, farmers loose the chances of having market information and as such selling their vegetable and other supplies at competitive prices would go down. Therefore
‘Distance to Market (DISTMKT); indicates an inverse relationship with the productivity. Then when, farmers occupies in full employment, due to their time limitation, agricultural farming sector would not be as steady as full time farmers. Hence ‘Full Employment (FULEMP)’ shows an inverse relationship with the agricultural productivity. Usually the farmers with laboring capacity (LABOURING) don’t have adequate education and thereby due to their poor decision making, it has an inverse relationship with the farm agricultural productivity (TFP\textsuperscript{FM}). Hence, ‘Employment in Laboring Jobs (LABOURING)’ has a negative relationship with productivity. As per the literature reveals and as per the sample observation, the farmers with Non-Farm Options enjoy a considerable high return than farmers. Therefore, the commitment done by the non-farm sector to agricultural productivity is low. Therefore, ‘Non-Farm Agriculture (NFM)’ shows inverse relationships with the Total Factor Productivity.

Table – 1.5 Impact of Education on rural poverty in Sri Lanka through Non-Farm income with agricultural productivity

<table>
<thead>
<tr>
<th>Independent and Moderating variables</th>
<th>Standardized Coefficients</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>Std. err</td>
</tr>
<tr>
<td>AGE</td>
<td>-0.0158</td>
<td>0.0202</td>
</tr>
<tr>
<td>EXP</td>
<td>-0.0223</td>
<td>0.0346</td>
</tr>
<tr>
<td>PRM</td>
<td>0.1549</td>
<td>0.1015</td>
</tr>
<tr>
<td>SEC</td>
<td>0.1538</td>
<td>0.1317</td>
</tr>
<tr>
<td>NOS</td>
<td>0.0541</td>
<td>0.0903</td>
</tr>
<tr>
<td>LAND</td>
<td>-0.1213</td>
<td>0.0295</td>
</tr>
<tr>
<td>SOCAP</td>
<td>0.1806</td>
<td>0.1012</td>
</tr>
<tr>
<td>DISTMKT</td>
<td>-0.0423</td>
<td>0.0332</td>
</tr>
<tr>
<td>HHSIZE</td>
<td>-0.0186</td>
<td>0.0285</td>
</tr>
<tr>
<td>IRRAV</td>
<td>0.1826</td>
<td>0.0663</td>
</tr>
<tr>
<td>FULEMP</td>
<td>-0.0924</td>
<td>0.0766</td>
</tr>
<tr>
<td>LABOURING</td>
<td>-0.1212</td>
<td>0.0316</td>
</tr>
<tr>
<td>RADIO</td>
<td>-0.1325</td>
<td>0.0309</td>
</tr>
<tr>
<td>GOV</td>
<td>0.0186</td>
<td>0.0212</td>
</tr>
<tr>
<td>EXT</td>
<td>-0.0279</td>
<td>0.0437</td>
</tr>
<tr>
<td>CRAV</td>
<td>0.0429</td>
<td>0.0184</td>
</tr>
<tr>
<td>TFP\textsuperscript{FM}</td>
<td>0.3494</td>
<td>0.1042</td>
</tr>
</tbody>
</table>

Dependent Variables : Non-Farm Total Factor Productivity (TFP\textsuperscript{FM})
Source: Developed by the Researcher based on SPSS AMOS (21)

As in the previous Table 1.5, the variables such as Irrigation Availability (IRRAV), Membership of Govi Associations (GOV), Attainment of Primary Education (PRM), No schooling (NOS), Credit Availability (CRAV), Total Factor Productivity (TFP), Social Capital (SOCAP) and Attainment of Secondary Education (SEC) have positive impact upon Non-Farm Agriculture. However the variables such as Irrigation Availability (IRRAV) and Credit Availability (CRAV) have a significant positive relationship than other variables.

As justification when irrigation improves (IRRAV), in order to facilitate farm options (TFP), the need for non-farm options emerge as the facilitative requirement for the farm options, therefore ‘Irrigation Availability (IRRAV)’ has a positive relationship with Non-Farm options. When farmers join with the Govi Associations and all, they get
then necessary guidance and motivation to go for financially viable ventures such as dairy and mushroom and etc. As a result of that ‘Membership of Govi Associations (GOV)’ has a positive relationship with the Non-farm Options. However the impacts of formal education such as Attainment of Primary Education (PRM) and Attainment of Secondary Education (SEC) have a natural positive impact towards the non-farm Total Factor Productivity (TFP). Although it is up to questionable reason, having gained no education at all would find avenues to earn their livelihood from the sources such as fishing, hunting and etc. shows that ‘No schooling (NOS)’ and non-farm options are correlated. Credit Availability (CRAV) can be a good motivator to the rural sector to starts Non-farm options with the capital capacities gained from the credit facilities. Further the impacts of FarmTotal Factor Productivity (TFP) to non-farm options are always positively correlates with non-farm options. As educational variables even the Social Capital (SOCAP) also have positive impact upon Non-Farm Options Productivity (TFP).

But when the family size increases, it limits resources availability and economic pressures would constraints the non-farm options negatively. Therefore Family Size (HHSIZE) has an inverse relationship with non-farm options. When the head of household is over, he does not see any interest of new things such as non-farm options, therefore ‘Age of the head of the household (AGE)’ has an inverse relationship with the non-farm options. The factors such as Availability of Radio (RADIO), Professional Experience (EXP), Extension Contacts (EXT), Full Employment (FULEMP), and Employment in Laboring Jobs (LABOURING), Availability of Land (LAND) and Distance to Market (DISTMKT) have an inverse relationship with the non-farm agricultural productivity as they are more focused to farm sector, employment and etc. not for non-farm sector.

V CONCLUSION AND FINDINGS

Education is the stock of knowledge or skill that a person hold within a period of time as per many studies. Productivity is the indicator which shows the output in terms of one unit of input. When something is ‘Productive’ mean ‘output’ generated from a one unit of ‘input’ is greater than one, if not it is called as ‘un-productive’. Therefore in order to arrive at a maximum amount of output from a minimum level of input, education can be viewed as a crucial indicator. Further education has the possibility to develop people’s capability as well in order to increase their economic strength.

However, it is obvious that education makes the people a resource, hence this resourceful people can make the things productive. Then the productivity emerges with plenty of advantages to agricultural sector and then the rural sector. Primarily, it gives a clear pathway to enhance the rural capability by; cost advantages, higher income, higher wages, adequate volume of marketable surplus to higher income, enhancement of skills, ability meet the growing agricultural demand of people and so on.

The sample area and its 409 families have shown real characteristics of rural sector. However their dependency on agriculture, their sources of income from farm, non-farm and employments are closely linked with the education. As per the analysis, it was evident, that education has a close relationship with; consumption, agricultural productivity, non-farm income, full employment and laboring jobs. Education and consumption is positively correlated. Primary education and secondary education are positively correlated with the agricultural productivity while No Schooling has an inverse relationship with the farm productivity. Further primary and secondary education are positively related with non-farm productivity.

However the role of education is considerable in making sure the maximum output for minimum farm or non-farm inputs due to their better decision making abilities, abilities in spotting opportunities and abilities in taking making risk decisions through environmental threats and etc. of which are fostered by the education. Not only education makes a key role in establishing productivity, education level can make people to be more capable than that of no-educated people. Further, higher educated people are more capable than the people with secondary education. Besides the people with secondary education have more capabilities than those with primary education. Not only formal education can make the people to be more productive and capable like this, even the informal and non-formal education also help to achieve a higher level of capability and productivity.


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Indo-Sri Lanka Bilateral Relations: Analytical review on Political & Cultural Relations Since 2005

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Abstract—In ancient history, India and Sri Lanka maintained close relationship with each other’s due to closed geographical proximity. Meanwhile religious and political ideology brought important factors to determine bilateral relations between both countries. In modern international relations both countries maintain close relationship with each other’s in Political and Cultural arena. Thru the political and cultural interdependency India has become a key player in regional and international development scenario. Indo-Sri Lanka Political and Cultural relations mark critical point since the beginning of ethnic conflict in Sri Lanka. Sinhala Tamil ethnic conflict which is protracted internal war made more Indian involvement to Sri Lanka in past three decades. Under His Excellency the President Mahinda Rajapaksa, Indo-Sri Lanka Bilateral Relations began into develop interdependency with each other’s. Moreover India becomes more influence party to determine Northern and Eastern development over Sri Lankan Tamil community during Eelam War IV and post war era.

Keywords—Post-War Development, Political Relations, Ethnic Sensitivity

I. INTRODUCTION

During the western colonization in Asian content, India and Ceylon were under British Raj nearly hundred and thirty years and got independence during same time. During the colonial period both countries faced political & cultural threat to their own regimes due to British administrative framework & missionary in Asia. During the post-colonial era both countries maintained close relationship within the international system due to their bond to commonwealth organization and ethnic sensitivity towards each other’s.

Since the independence, Dominion of Ceylon (DoC) mainly focuses on regional powers to determine Ceylon foreign Policy in Post-Independence era. During the post-colonial era Ceylon-India maintain close relationship within the international system due to their alliance to The Commonwealth Nations and ethnic sensitivity towards each other’s. Since 1980, Indo – Sri Lanka political and cultural relations mark critical point due to beginning of ethnic war in Sri Lanka. Sri Lankan ethnic conflict which is protracted internal war made more Indian involvement to Sri Lanka. In 1987 Indian government intervention to Sri Lankan air space created high pressure on both countries bilateral relations and it has indicated Indian sensitivity toward Sri Lankan Tamil community. As a result of that, GoSL forcefully signed Indo-Sri Lanka Accord in July 1987. There are two major implementations under Indo-Sri Lanka accord. One is adjoin north and eastern provinces and allow Indian Peacekeeping Forces (IPKF) to enter Jaffna Peninsula. Thru that, Indian government believed separation of power will secure Tamil political rights and eliminating LTTE in northern area will secure peaceful living situations for Tamil community in Sri Lanka.

II. INDO-SRI LANKA POLITICAL RELATIONS

Under His Excellency President Mahinda Rajapaksha, Indo-Sri Lanka Bilateral Relations began into develop interdependent with each other’s. Manifesto of Presidential campaign called “Mahinda Chinthana” mentioning about Sri Lankan Foreign policy toward India was based on two priorities. One is acceptance of Indian supremacy over Sri Lankan ethnic conflict and other one is friendly-cooperative approach to conduct bilateral relations. To re-establish the faithful image of Sri Lankan New Government President Mahinda Rajapaksha decided to conduct his first visit to India on December 27-30, 2005. During his visit he met Indian President Abdul Kalam and he explained importance of Indian role in establishing peace and
eliminating terrorism in South Asia (Daily News, 2005)

A. Political Relations 2005-2009
During 2005-2009 Indo-Sri Lanka political relations relayed on Sri Lankan Internal war and Indian response over that. Because of that Sri Lanka developed close high-end political relations with India during the period of North and Eastern Humanitarian missions. Especially in the beginning of Mavil Aru Humanitarian Mission. Sri Lanka sent top diplomats to explain GoSL strategic plan to Gol to avoid unnecessary regional influence. Especially during 14th SAARC Summit in New Delhi on 2007 March 29th-to April 04th President Rajapaksha explains his strategy based on Eastern Province developments and establishing peace in Sri Lanka to Indian Prime Minister Manmohan Singh. While Northern and Eastern humanitarian missions and Sri Lankan diplomatic mission continually share recent update with Ministry of External Affairs in India to get political and military advice till 2008. Soon after the Northern victory Indian the Lok Sabha and the Rajya Sabha conduct legislative season to discuss Sri Lankan internal political issue and due to Tamil Nadu pressure, Central Indian Government decided to halt their military and political support in top level and advice GoSL to conduct missions in proper manner. Meanwhile India request GoSL to resolve issues in thru discussion and avoid unnecessary human sacrifice. To response that President Rajapaksha during his visit to India in October 27, 2007 clarifies Sri Lankan government always use open discussion to resolve ethnic issue (Hindustani Times, 2007). Moreover During 15th SAARC Summit in Colombo President Rajapaksha explain South Asian leaders about necessity in eliminating terrorism in South Asian region and Stand against for terrorist activities in region (Piru, 2008).

During the last stage of war, Sri Lanka got more pressure from western countries to move on peace process rather engaging war with LTTE terrorist s. But as always GoSL explain necessity in eliminating terrorism to archive positive peace in conflict affected area (Hansard, 2009). Moreover western countries especially USA and UK requested India to immediate mediation to last stage of war and pressure GoSL to move toward peace talk process. Meanwhile Indian External Affairs Minister Pranab Mukherjee visit Sri Lanka as a Special Indian envoy to discuss war strategies and explain GoSL solution for ethnic war in Sri Lanka (mea.gov.in, 2009).

GoSL military victory over LTTE make more complex situation between two parties. In military, Sri Lankan armed forces showed their high capability in counterterrorism activities and made indirect challenge to Indian hegemonic power in region. Because in between 1987-1990 powerful IPKF fail to eliminate LTTE in Northern Province but twenty years later GoSL armed forces archive target with minimal casualties. Politically, it makes huge internal and external pressures from western alliance as well as Tamil diaspora based on Indian actions over last stage of war.

B. Political Relations 2010-2014
During post internal war era, India continues its political review on Sri Lanka and asks to move forward on Political solution. The intention of preventing negative impact, GoSL established Lesson Learnt and Reconciliation Commission (LLRC) appointed by President Mahinda Rajapaksha to fact finding mission on Internal war and also addressed international allegation about war crimes. After two years, conducting a long mission, LLRC released their report in public in December 2011 and GoSL prepared National Action Plan to address LLRC recommendations with a lot of international and regional pressure. Consequently, GoSL proved international and regional community, that it has a peace building plan to establish positive peace in war affected areas and other parts of the country (Piru, 2012). Meanwhile Gol continue his support to GoSL over Resettlement and Rehabilitation programme. Apart from that Gol become a main facilitator to “Northern Spring” (Uthuru Wasanthaya) and “Reawakening of the East’ (Nagenahira Navodaya) programmes. In addition to that President Rajapaksha during his visit to India in June 2010, explained GoSL move forward with LLRC recommendations but priority is providing basic needs to internal refugees. India donated USD 105 package for relief, rehabilitation, and reconstruction to President Mahinda Rajapaksha during his visit to India on 10-11 June 2010 (cgijaffna.org, 2014).

Furthermore, GoSL took actions to remove land mines in Northern Province to make living more comfortable. The homeland concept was strongly affected on traditional people who believe their land is everything for them and motivation form
South Indian politicians create mass impact on resettlement plan. As a result of South Indian pressure GoSL announced sensitive security areas such as army camps and tactical areas can’t be given for their original owners due to security matters. Apart from that, due to lack of legal evidence some people lost their lands and some of them were taken over by the government to deploy investment projects and handle ground facilities in Northern Province. With the intention of avoiding such kind of situation, GoSL established special land despite resolving commissioner to speed up on ownership matter and a resettlement issue which was highly appreciated by Indian political leaders lately (Piru, 2012).

Indo-Sri Lanka Political alliance marked a lapse during 2011 war crimes allegations. Mainly South Indian communities’ continually demanded international investigations against GoSL and pressured central government to stand against Sri Lanka in international stage. Meanwhile in 2012, USA and western countries brought a resolution against Sri Lanka to United Nation Human Right Council (UNHRC) and created a dialogue against Sri Lanka in international stage. Consequently, UNHRC conduct season about “Promoting reconciliation and accountability in Sri Lanka” and open stage for war crimes discussion. During the UNHRC 19th Season Indian government politically moved with Sri Lanka and it reduced the international pressure on war crime investigation. Meanwhile India has prominently become a major key player in international stage during UNHRC. South Indian involvement dramatically created a massive damage for moral willingness for peace and integration in Sri Lanka. Therefore multilateral cooperation’s and INGO’s involved in internal issues because it was affected to investment and cross cultural integration as well as post war reconstruction progress (Douglas Keh, 2012).

To ensure political security among Tamil community and secure faith with Indian government, GoSL lunched the All Party Representative Committee (APRC) to provide a better political solution. But at the beginning major Tamil community representatives such as Tamil National Alliance (TNA) withdrew form APRC without granting proper chance of dialogue with Tamil People. Moreover GoI request GoSL to transfer power in to local authorities’ especially in local government and held a Northern Province election to prove the government accountability. To establish the democracy GoSL held a local government election in northern and eastern province to secure political rights. Completing first half of grass root level democracy and peace building, it created ad hoc for long hated political insecurity and resolved major root cases for conflict. Apart from that President Rajapaksha gave his assurance to India about the implementation of 13 amendments without any doubt and gave political solutions for Tamil minority (Piru, 2011). Then he assured Indian government about Northern Province elections in September 2013 (Asian tribute, 2013). Those actions helped to build up positive attitude on democratic movement in Sri Lanka. Unfortunately after announcing Northern Province election, some political parties as well as Buddhist monk organizations came forward to remove 13 amendments and to remove land and police power in provincial government which was created under Indo-Sri Lanka Agreement in 1987.

The Situation became more critical when Sinhala community rose against 13th amendment because they felt political insecurity among land and police powers. On the other hand Tamil diaspora and Indian political parties questioned about Sri Lankan accountability to peace and international community.

As a result of India became an aggressive regional power to deter Sri Lankan position in international stage. Especially Indian Congress Government considers Tamil Nadu and Chinese involvement as a defensive factor for Indo-Sri Lanka relations. Therefor Sri Lankan Diplomatic missions conduct negotiations with different layers of Indian diplomats and re-established the faithful image of GoSL to Indian Congress Government. Somehow in 2014 Indo-Sri Lanka bilateral relations make positive impact on each other’s. Especially during the UNHRC 25th Regular Season when USA brought strong proposal to UNHRC and requested to conduct international independence investigations on war crimes committed during the internal war. On that time India was absent in position and provided an opportunity to GoSL to adjust their foreign and internal policy toward India.

During the 2014 Indian election campaign Sri Lankan war crimes was a main theme to South Indian politicians for grabbing ethnic votes for their parties. But at the end of the election Indian Congress Party was greatly defeated by Bharatiya...
Janata Party and former Gujarat Chief Minister Narendra Modi became the new Indian Prime Minister for next four years with great foreign policy. Recent regime change in India provides a wide perspective to continue Indo-Sri Lanka relations with deeper approach.

III. INDO-SRI LANKA CULTURAL RELATIONS

Indo-Sri Lanka cultural relations mainly ties with Buddhist and Tamil culture developments. Especially since 2005 both religious development programmes runs thru diplomatic missions and provide more political and administrative backup to carry out them. For example SAARC cultural programme and Education development process was suddenly accelerated by both government and developed cross culture activities for further mediation process. Thru establishing South Asian University, New Delhi in 2010 provided more opportunities for SAARC as well as Sri Lankan academic community to improve cultural as well as educational ties with India. Moreover Indian government provided security and facilities for Sri Lankan pilgrims to India and secured their economic interests as well. For example GoI provided a cultural guide line to all Sri Lankans, especially those who went to India thru South Indian hubs during 2009-2014. Because on that time South Indian politicians demanded another bloodshed between ethnic communities in Sri Lanka thru attaching Buddhist pilgrims in South Indian areas (Priiu, 2013).

As a result of bilateral request between Sri Lankan and Indian executive authorities, GoI provided a great opportunity to Sri Lankan Buddhist community thru facilitating Exposition of Sacred Kapilavastu Relics in August 2012 (High Commission of India, 2012) thru that India has positively built up their cultural relations from grass root level. Moreover Indian government provided financial assistance for Northern Province religious and cultural centre rebuilding programmes especially Tamil and Hindu populated areas. Under the Indian Centre for Cultural Studies (ICCR) India promoted Buddhist International Performing Arts Festival in New Delhi in 2012 April and helped to build strong cultural bond between two countries.

IV. CONTEMPORARY POLITICAL ISSUES

A. Resettlement and War Crimes

During last six years we can identify two major political issues between Sri Lanka and India. First one is relaying on IDP settlement and ethnic right on Northern Tamil community. During the last stage of internal war Sri Lankan defence forces rescued 145,674 civilians and settled them over government maintained IDP camps (Defence.lk, 2009). GoSL maintained IDP issues as their top priority under certain limitations. Unfortunately those limitations make uncomfortable situation to GoI and they pressurize top level diplomats as well as President Mahinda Rajapaksha regarding above issues. After the internal war, many western countries claim GoSL committed crimes against humanity during the last stage of war. As a result of that international community brought resolutions called “Promoting reconciliation and accountability in Sri Lanka” under UNHRC A/HRC/RES/19/2 and UNHRC A/HRC/RES/22/2 (UNHRC Season 19, 22, 2012/13). In 2012 GoI support Sri Lankan commitments over accountability in resettlement but in 2012 Human Right season GoI decide to vote against Sri Lanka. Indian support over UNHRC resolution on Human Right issues has significantly damage core value of bilateral relations between two countries. Soon after UNHRC except top level, all others local parties blame each other. Especially Sri Lankan politicians and diplomatic community claim India has violated Non Alignment policy and those action is similar to Indian invade in Northern Area on 1987.

Thru reviewing the Indian strategies for Sri Lankan Internal issue between 2005-2009, we can identify that India always supported for political solution rather than military solutions for ethnic issue. Moreover Indian Solution for Sri Lanka was greatly influenced by Tamil Nadu politicians as well as International Tamil Diaspora. Thru that GoI has significantly accept non state actors influence on foreign policy decision making process and accepted the interdependency between state and non-state actors.

B. Illegal fishing issue

After the internal war, GoSL encouraged fishing in Northern and Eastern areas. As a result of that more local fishermen got involved with large scale fishing and other naval natural resources gaining in Mannar and Kachchativu areas as they are very rich
over natural sea resources. Due to minimal pressure on border patrol, Indian fishermen reach to Sri Lankan naval boarders to catch fish due to rich natural resources. Those actions create neding questions for both governments. After lot of complains against Indian illegal fishing boats and their large scale resource poaching GoSL decided to take strong actions against those who are violating the territorial boarders. Later Sri Lankan Navy conducted the boarder petrol to catching illegal fishing boats and charged several Indian nationals over illegal border crossing. Meanwhile Tamil Nadu state government pressured Indian central government on above actions and demanded immediate diplomatic actions against GoSL. In 2011 Hon. Rajitha Senarathna, Minister of Fisheries and Aquatic Resources Development, Sri Lanka held diplomatic talk with Indian Minister of Agriculture and Fisheries, Sharad Pawar regarding illegal attempts to Sri Lankan territorial water and avoid unnecessary issues between both countries (Sundaytimes, 2011). But Tamil Nadu Chief Minister Jayalalithaa Jayaram requested central government to immediately withdraw The 1974-1976 Traitorous Agreements and claim their territorial right over Gulf of Mannar, the Palk Bay, and Palk Strai. Thru this Tamil Nadu became a key factor to determine Indo-Sri Lanka bilateral relations as well as a spoiler. Over this incident Indian External Affairs Minister S.M. Krishna clarified Sri Lankan right over Katchatheevu Island cannot be abrogated due to the Indian respect over solemn agreement (Lok Sabha, 2010).

This situation has grown during 2014 and Tamil Nadu continually said Sri Lankan Navy has illegally arrested Indian nationals in international water and some of Indian fisherman was killed during the raid (NDTV, 2013). Territorial claims over Mannar and other northern areas deeply impact to the local and international relations due to its sensitivity on national and international economic as well as politics.

In early 2014, President Mahinda Rajapaksha decides to mediate international territorial claims and try to provide high level political solutions for these issues. Moreover Recent regime change in India has provided a new approach to enter the top level diplomatic talk between national leaders and GoSL has officially decided to show positive approach to Indian government thru releasing Indian fisherman who’s currently under Sri Lankan Navy arrest. This incident was carried out while President Mahinda Rajapaksha visited New Indian Prime Minister Sworn ceremony in New Delhi.

Thru examine the context we can properly identify previous diplomatic negotiations failed due to two reasons. One is involvement of low level diplomats and other one is lack of confidence between two parties. Especially during Indian Congress government attitude toward Sri Lanka has negatively grown up in political arena due to issues in post war reconstruction progress and War crimes over last stage of war. President Mahinda Rajapaksha involvement has proven top level discussion regarding the issue will provide more secure base for both national interest over each other’s.

V. CONCLUSION

In the conclusion researcher can mainly identify Indo-Sri Lanka bilateral relations relay on state actors as well as non-state actors such as Tamil Nadu and Tamil Diaspora. Moreover the positive steps taken by GoI and GOSL in a friendly approach with each other and their expectations to take more actions in near future should be highly appreciated. Both parties’ unwillingness to be more flexible on negotiation terms and their preference to settle matters with win-win situation would cause issues. The issue of their unwillingness to negotiation could be avoided by following a co-operative approach by both parties and respecting each other’s ideas. However, it is proved that lack of co-operation and confidence has become a barrier for development for bilateral relations in wide aspect.

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**BIOGRAPHY OF AUTHORS**

1 The Author is an Lecturer in the Department of International Relations, University of Colombo, Sri Lanka. His research interests include Foreign Policy and Post war analysis. He has produced research papers based on Sri Lanka Foreign policy and implementation of Positive Peace Within ethnic communities. Moreover, he has more than 10 referred international and local Journal publications to his credit.

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Abstract - Drug addiction has been considered as one of the world's largest enemies. As Buddhists, we must be aware of this terrible situation with the open-mind. True Buddhist never violates the Five Precepts (pañcasīla). The last of the Five Precepts in Buddhism advocates complete refraining from taking intoxicating drinks and the other alcoholic drugs. Total abstinence from taking intoxicants is extremely significant for the mental and physical health of society. Drug addiction like alcoholic drinking, tobacco smoking like cigarettes, cigars and pipe smoking, smoking cannabis (ganja), heroin ...Etc has become one of the most troubling social problems in the modern Sri Lankan society. Objectives of this article are to suggest the Buddhist solutions to wipe out drug abuse. One of the main factors that is retarding sustainable development economic growth and the increase in poverty at the grass roots level continues to be the use of drugs mainly alcohol and cigarettes. Trend in Liquor challenges the entire moral order of society if we are planning for a prosperous country. The cost burden to a country because of the consumption of alcohol due to ill health, violence, accidents, loss of productivity has made alcohol the number one factor in the burden of disease of middle income countries such as Sri Lanka. The data for study has been collected from the primarily Buddhists teachings and the relevant books and articles written related the field and social experiences. Buddhism is fully aware of the nature of social problems, their causes, and the methods for resolving them. Its social impact is tremendously great. The Four Noble Truth can be applied as the best resolution for this dangerous issue.

Keywords: Drug Addiction, Buddhism, Five Precepts, Development, Sri Lanka

Nowadays, Sri Lanka, our mother land experiences in dealing with drug addiction is the most troubling social issues. The government of Sri Lanka and the Ministry of Health have been taken various measures to scale down the addiction of cigarettes, arracks, opium, cannabis, heroin and certain psychotropic substances, but not all these efforts have been successful. There has been an increase in the involvement of Sri Lankan nationals in smuggling drugs across national boundaries. The illicit trafficking of drugs have been increasing day by day in Sri Lanka. The absence of a comprehensive national policy on drug abuse has been a major restriction on law enforcement could be the foremost reason for this. Sri Lanka is lucky to have a rich tradition of networks of religious institutions, and these can be mobilized to discourage the use of intoxicating drugs and alcohol. Under the drug addicted surroundings, what happens to the future of Sri Lanka and its future generation? My main focus in this paper is giving the Buddhist approach to scale down this terrible enemy. The data for this study has been collected from the primarily Buddhists teachings and the relevant books and articles written related the field and social experiences.

The last of the Five Precepts in Buddhism advocates total abstinence to drug addiction. Total abstinence from taking intoxicants is extremely significant for the mental and physical health of society. Buddhism is fully aware of the nature of social problems, their causes, and the methods for resolving them. Its social impact is extremely enormous. The Four Noble Truth of Buddhism can be applied as the best resolution for this dangerous issue.

a. Suffering - Disease
b. Cause of Suffering - Diagnosis
c. Cessation of Suffering - Prognosis
d. The Path leading to the cessation of Suffering - Treatment
Although we are planning for a prosperous country, trend in liquor production, which is very disconnecting. The cost burden to a country because of the consumption of alcohol due to ill health, violence, accidents, loss of productivity has made alcohol the number one factor in the burden of disease of middle income countries such as Sri Lanka. Consumption of the alcohol and tobacco are being increased day by day in Sri Lanka. The expenditure on alcohol and tobacco in a single year is above Rs. 80 billion.

The application of the *Pañcasīla* concept of Buddhism is tremendously more useful for today than any days of the humane society. Its universal acclaimability and acceptability is great. This universal concept fully guides for good physical and mental balance. This consists of the following initial precepts.

a. Safeguards the security of all life including human and animal.
b. Safeguards the right of ownership of justifiably acquired private property.
c. Maintenance of healthy relations between genders.
d. Upholding honesty in all social transactions.
e. Taking care of soundness of human judgment by keeping away from intoxicants and drugs.

The fifth one, the precept of abstaining from the use of drugs and intoxicants (*surā-meraya-majja-pamādā-ṭṭhānā veramaṇī sikhā-padānī*) is quite significant with regard to our context. The *Singālovāda Sutta* of the Digha Nikāya emphasizes the six evil consequences in addiction to intoxicants and alcoholic drinks.

a. Loss of wealth (sandiṭṭhidhūpa dhanaijanī)
b. Increase of quarrels (kalaha-ppavacāṭhānī)
c. Susceptibility to disease (rogaṇāṇī āyatanaṇī)
d. Earning an evil reputation (akitti-saṅjānī)
e. Shameless exposure of body (dubbalikāranaṇī)
f. Weakening of intellect (paṅñāya-dubbalikāraṇī)

*Cha kho me gahaputta ādināvā surāmerayamajjapamādāṭṭhānānuyoge: sandiṭṭhidhūpa dhanaijanī, kalaha-ppavacāṭhānī, rogaṇāṇī āyatanaṇī, akitti-saṅjānī, koṅniṇaddasānī, paṅñāya dubbalikāraniṇī vevasa chaṭṭhām padama bhavati. Ime kho gahapatiputta cha ādināvā surāmerayamajjapamādāṭṭhānānuyoge-The Singālovāda Sutta)*

These six ways highlight and pay attention on the three vital grounds that every man and woman has severely undergo many pains in this life itself.

a) Declination of economic well-being (1)
b) Deterioration of good Health (3&6)
c) Harming Social status (2, 4 & 5)

In the *Vanijjā Sutta*, the Buddha speaks of five prohibited trades in which one should never earn money engaging those things. One of them is *majja vanijjā* (Trade of drugs and alcoholic drinks). Even in *the Dhammapada*, the text of the Khuddaka Nikāya in the Theravāda Canon mentions that the person who goes against the five precept destroys this life completely.

yo pāṇāṁ atipāteti musāvādāṁca bhāṣati loke adinnamā ādiyati parādārāṁca gacchati *surāmerayāpāṇāṁca* yo naro anuvāhanti idhi ’ev’ so lokasmiṁ mūlaṁ khaṇati attano.

(The Dhammapada verse 246 and The Anguttara Nikāya III)

*The Dhammika Sutta* of the Suttanipāta says that not to resort the use of intoxicant drinks, the householder should respect this principle, he should not make others drink, nor approve the drinking habit of others, knowing it to be a process of maddening.

majjaṁ ca pāṇāṁ na samācareyya dhammamā imaṁ rociye yo gahaṭṭho na pāye ye pivaṭṭaṁ nānujaṁīnī ummādanaṁ taṁ iti naṁ viditvā.

*The Parābhava Sutta* points out that the person who engages in the following wicked causes such as to be a rake, a drunkard, a gambler, and to squander all one earns where it is a cause of one’s downfall.

itthidhutto *suraduttho* akkhadhutto ca yo naro laddhaṁ laddhaṁ vināseti taṁ parābhavato mukhaṁ

To establish a peaceful and harmonious society, Buddhism suggests that there should not have any room for the use of alcoholic drinks and other so called production. Buddhism introduces for good governance the concept of the Wheel Turning Monarch consisting with the just and righteous principles (*rājā cakkavattī dhammiko dhammarājā*).
The nature of the Wheel Turning Monarch could be found in the well-known *Cakkavatthisihanāda Sutta*. He sees nothing better than the five precepts. He puts into action the acclaimability and acceptability of the pañca sīla. There is no place for spread of drugs and intoxicants in his realm at all. The king completely prohibits the trade of drugs and intoxicants. His realm never depends on alcoholic production. Because he knows the danger of this production and how to influence it for his people and his kingdom. He commands other rulers to implement this universal precept for the purpose of enhancing norms and morals in the world. (pāṇo na hantabbo adinnāṃ nādatabbāṃ kāmesu micchā na caritabbaṃ musā na bhāsitabbā majjāṃ na pātabbaṃ...The Dīgha Nikāya III, The Cakkavattisihanāda Sutta)

Though Sri Lanka is a Buddhist country prevailing drugs and alcoholic production throughout the Island is the worst factor. The Sri Lankan government earns millions of dollars per a day through the products in liquor. On the other hand it spends double per a day for those who are suffering from drink related illness. This harms our physical and mental surroundings. Therefore, as the Sri Lankans we must realize the danger of this bad influence. Through the complete eradication of drug addiction, production and distribution in Sri Lanka, it could become the miracle of Asia and the world. We, the future of Sri Lanka always hope a country that completely free from drug addiction and production.

REFERENCES


Determinants of Child Labour in Sri Lanka
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Abstract - Children are the key of future human resources of any region. However some children have to work entire day to satisfy the basic needs and wants and their family as a labourer, called child labour. The child employment is hard, cruel and violates their rights of education, health protection from work that is hazardous or exploitative. In Sri Lanka one out of eight children is economically active. A large number of children in Sri Lanka work in unregistered sector. The prime objective of the study is to identify the determinants of child labour in Sri Lanka. 120 questionnaires were used from both child labors and non child labors from the Pettah, Colombo district using Convenience sampling method. Binary logistic regression was used for analysis.

The study found that child labor is primarily caused by low income level of household. Parents of child labors are received lower level of income compared with the parents of non-child labors. The income is not enough to maintain family needs and wants. It leads to exploitation of children’s time for employment instead of schooling or education. Education level of household heads also has negative relationship on child labor. Lower levels of education of parents have higher possibility to make their children with employment. The education will be the key of making skills and capacity of persons and it is linked with income level of persons or family. Lower level of education of the family will make the worst form of attitudes on education. The lacks of supports of household on education are resulted to make low motivation of children’s study. Thus the time of schooling will convert to employment activities. Further magnitude of the household is one of affected factor to engage children in employment. Child labour rate is high when the members of family more than considerable amount compared with families that have fewer members. Employment status of head of the family makes negative impact on children’s employment. Many of child labour can be seen where the heads are self-employed workers or small business holders. Many of temporary employment opportunities are available in business or self-employment sector. Thus children have opportunity to engage with such kind of employment under the permission of parents or not. The family with child labour has lack of infrastructure compared with non labour families. Thus the lower facilities availability in household are affected to child employment.

Keywords: Child labour, Non child labour

I. INTRODUCTION

The world’s attention on child labor has been increasing as there is a significant number of child labor in both developed and developing countries and their involvement in exploitative or dangerous work is high. The ILO estimates that around 215 million of children are trapped in child labour. More than a half of these children are involved in hazardous pursuits that sometimes amount to slavery, armed conflict, drug trafficking and other illegal activities. According to the United Nation connection on the Right of the article 1989, chid labour defines as “any work that is likely to be hazardous or to interfere with the child’s education or to be harmful to the child’s health or physical, mental, spiritual, moral or social development”. The problem of child labour not only causes to damage their physical and mental health but also their education right, freedom, development of childhood etc. Both developing countries and developed countries are faced to the phenomenon of child labour. The international Programme on Elimination of Child Labour was launched under the International Labour Organization to study child labour and its ramifications in Sri Lanka. When compared with developing countries in the world Sri Lanka possesses relatively high human development indexes and enjoys a higher level in socio-economic standards due to various human development programmes launched by successive Sri Lankan governments since independence. Among these, providing equal opportunities in
education for the country’s child population was generally focused on eliminating child labour.

II. OBJECTIVES

The prime objective of the study is to identify the factors which affect to be a child labour.

III. PROBLEM STATEMENT

Child labor is a common phenomenon in many countries including Sri Lanka. Employment of children is negatively affecting their welfare. Especially it reduces children’s future wellbeing as adults and productive capacity of the country. Different socio economic and personal factors are opening to become a labor in their childhood. Therefore the study are attempted to understand the work patterns of children and the factors that lead them to work.

IV. LITERATURE REVIEW

Child labour is determined by variety of internal and external factors of household (Phoumin & Seiichi,2008). The internal factors include the size of the family, parents’ education, family culture, fertility and household risk. Factors which are external to the household include the educational system and other social infrastructure available to the household, structure of the labour market, level of technological development. According to the Deheja and Gatti (2001) “the primary reason for child labour is poverty, it is not the sole reason for child employment, child labour relates to cultural aspects such as gender norms, children age, education and parental education conditions. Household poverty as a strong possible canes to child labour (Rudney,2004; Bassu,1999; Bequel & Boyden,1988; Boyden, 1991; Grootaert and Kanbur,1995). According to Amma et al (2000) parents’ died on diseases or where children live with single parent or guardian who depends on production, children forced to work instead schooling for survival of family. Inability to meet basic needs of children like education, foods, shelter and cloths causes to engage children in employment for improve their conditions and livelihood are the main reasons. Tungesvik (2000) discussed the internal division of work within the household as one of contributory factors for child labour. According to khan (1982) Poverty, illiteracy of parents and lack of educational facilities were identified as the variables, which lead to supply child labour. Behrman and Knowles (1999) concluded that sociological variable such as gender, caste and religion may play an important role in determining the child employment and attending schools. Further he concluded that the elasticity of schooling expenditure and income are greater for boys than for girls in some countries. Thusthe education defined as a luxury rather than necessity for female in some regions. Thus then concluded that children employment specially in female could be higher that countries instead male.

V. METHODOLOGY

The study based on primary data.120 primary data was collected from both child labours and Non child labours from the Pettah, Colombo district using Convenience sampling method.

Charts, graphs and tables were used to represent the qualitative and quantitative data. Binary Logistic regression was used to identify the determinants of child labour.

\[ i = \Pr (Y_i = 1/X_i = X) = \frac{\exp (B_0 + B_1 X_i)}{1 + \exp (B_0 + B_1 X_i)} \]

Y = Binary responsible variable

Yi = If the trait is present in observation i (Being a child labour = 1)

Yi = 0 if the trait is not present in observation i (Not being a child labour = 0)

X = (X1, X2, Xk) are explanatory (independent) variables and linear in the parameters

B0, B1 = Parameters

VI. RESULT AND DISCUSSION

The following section discusses the characteristics of child labour and determinants of child labour.

Figure 1: child labour distributions by gender
Source: Sample survey, 2013

89% of the total child labour is male indicating male are more vulnerable to labour.
Many of them are casual workers it represent more 1/3 from total child employers. 19% are owned account workers. This may be due to elementary occupations of child labours. The elementary occupations consist with street vendors, mobile vendors, labours engaged in manufacturing, construction, mining, shops and market, salesman, serviceman and etc. According to survey data many of them are employed on the street, construction areas, hotel shops and restaurants and factory. Thus many of children has some hidden opportunities to engage with elementary occupations as regular, casual or owned account workers. 13% from the survey data represent regular workers, this is because many of children of age group 15-17 are highly engaged some form of regular workers, because many of them out of schooling.

According to below figure many child labours have received money as their main benefit. 73% from total of survey data represent money as a main earning from employment. This is due to expectation on employed children that money as major thing. They were poor and they try to reduce the level of poverty within the family. 12% of foods are received on behalf of employment. According to the survey data, many child labours employed in factory, hotel and restaurant, and construction sites and some employers supply foods, cloths and other things such as transportation on behalf of their labours. Many of child labours those who are at 15-17 age group are benefiting such facilities under regular employment condition. But those are not sufficient.

Many number of child labours received income or their salary under daily basis. labours between age of 5-11 and 12-14, received their payment under daily basis. Many of them are temporary workers and they engage with some form of elementary occupations. Majority of child labours who employed in hotel, boutiques, on the street and construction sites, received daily basis and piece rate payment. 44% of child labours under the age of 15-17, received monthly salary because dropout of schooling from grade 11 resulted to engage children in regular employment specially in factories.

Mainly child labours give whole or part of their income to the family. From that 59% are given by the age group of 5-11. 12-14 age group utilized income for pay school fees or buy things for school. Many child labours in between 15-17 spend money for buy things for family and buy personal effects. Saving rate of child labours are lower level in between 12-14 and 15-17 age group. (Figure 4)
The age level between 5 - 11 and 12 -14 mostly carries out their employment after the school time (63.8%). This also due to compulsory education and they are not permitted to do employment at whole day or school time. Considering age group 15­-17, their main occupation characteristic on time is different from other two groups of age level. They mostly engaged in period of 6am - 6pm and the whole day employment engagement also at higher level. Many of them are not attending school and after the GCE (O/L) examination they try to do a job on their different requirements. On the other hand after the age of 14 years, consider that they are not children, so such type of attitudes are negatively affected to children and it may be result to change the employment routing of children. The hour group called ‘other’ indicates child labours those who have not predetermined working schedule and they use any time that they free for employment. It is also represent higher level in age group 5-11 and 12-14 as a percentage of 16.2% and 17.4% respectively.

Income level negatively correlated with children’s employment. Income reduction caused to increase child employment. The higher amount of child labours in between the income level of 0-10000 and 11000- 15000 its 93% and 69% from total. Income level in between 21000 or more has lower proportion to child labour. Due to lower education level of household head, the percentage of child labour has raised. Education level in between 1- 10 represented higher possibility to be a child as a labour, it is about 88%. Education level of household head represents a relationship with income level of family. Lower level of income is resulted lower level of education of head of household.(Figure 7)

Infrastructure facilities of household has inversely related to child employment. Lower level of facilities are available in household result to increase the child employment. It has shown that 88% of child labours are not satisfied with their family infrastructure. Further attitudes of family on education also have negative relationship on child labour. 66% of child labours’ families have bad attitudes on education. Thus attitudes on education...
of family are one of important factor to determine child employment. The income level of the family indirectly correlated with above mentioned factors.

Self-employed head’s families have higher possibility to child labours. It is about 86% from sample survey data. Businessman represents 63% of child employment level. Business represents all type of small business. The head of household who employed in government or private sectors have a lower possibility to be their children as child labours; it is represented by 23% and 36% respectively. One of main reason to that is satisfactory level of education. The magnitude of the family also has a heavy burden in child employment. Higher rate of child labours are recorded from the family which has more members (7-10 group). The member group 1-3 represents less level of child employment rate (figure 9).

![Figure 9: Child labour and non-child labour on employment status of household head and magnitude of the family](image)

Source: Sample survey, 2013

C. Fit the Model for the factors affecting to the child employment.

Stepwise (Foreword LR) method was used for the identifying the best fitted model for the dataset. First step of the analysis is fit the null model. P-value of the constant is significance at 5% level of significance. When null model is significance mean deviation is 0.586.

\[ \text{logit}(\pi) = \beta_0 \]

**Table 1: Categories of the variable**

<table>
<thead>
<tr>
<th>B</th>
<th>Wald</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.586</td>
<td>2.345</td>
<td>0.048</td>
</tr>
</tbody>
</table>

Source: Sample survey, 2013

Null model is significance at 5% level of significance because p-value (0.048) is less than 0.05. Null model is not enough for describing the logistic regression model. Therefore, the significance variables among the chi-square test had entered to the model one by one.

A. Model with one variable

In this step identify the other significance variables with null model.

B. Model with level of income of the household

The logistic regression model is identifying the relationship between Level of income of household and child labour.

\[ \text{logit}(\pi) = \beta_0 + \beta_{10000} + \beta_{11000-15000} + \beta_{16000-20000} + \beta_{21000-30000} \]

**Table 2: Model with hours of work**

<table>
<thead>
<tr>
<th>B</th>
<th>Wald</th>
<th>Sig</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of income</td>
<td>24.382</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>0 - 10000</td>
<td>4.257</td>
<td>17.120</td>
<td>0.000</td>
</tr>
<tr>
<td>11000 - 15000</td>
<td>3.561</td>
<td>15.424</td>
<td>0.000</td>
</tr>
<tr>
<td>16000 - 20000</td>
<td>2.507</td>
<td>18.784</td>
<td>0.000</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.773</td>
<td>14.470</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Sample survey, 2013

Reference Category 21000-30000

According to the above table, due to zero the last category of the variable of ‘level of income of household’ which indicate the range of ‘21000 - 30000’, it leads to decrease the whole parameter P - valueless than 0.05 (.000< 0.05). Thus, the variable of ‘level of income of household’ is significance on the model of one variable. Further the categories of 0 - 10000, 11- 15000, and 16000 – 2000 are significance when consider every categories as individual. The possibility of to be a child labour on level of income of household such as ‘0 – 10000’, ‘11000 – 15000’ and ‘16000 – 2000’ are increased by 70 times, 35 times and 12 times respectively to the income level of 21000 – 30000. In practically lower level of income resulted to higher rate of poverty. Poverty is one of main reason to child employment. According to data the income less than Rs.10000 represent higher possibility to having child in employment than higher income level. Rudney (2004) and Guarcello (2004) have identified that the handhold poverty and lower level income of household are one of important factor to determine child employment.
of income as a strong possible canes to child labour. Thus the result are same as pervious findings.

D. Model with magnitude of the household
The logistic regression model is identifying the relationship between magnitude of household and child labour.

\[ \logit(\pi_i) = \beta_0 + \beta_1^{1-3} + \beta_1^{4-6} + \beta_1^{7-10} \]

Table 3: Model with magnitude of household

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Wald</th>
<th>P value</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>magnitude of household</td>
<td>19.766</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 - 6</td>
<td>1.480</td>
<td>6.504</td>
<td>.011</td>
<td>4.391</td>
</tr>
<tr>
<td>7 - 10</td>
<td>3.095</td>
<td>19.740</td>
<td>.000</td>
<td>22.080</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.526</td>
<td>9.565</td>
<td>.002</td>
<td>.217</td>
</tr>
</tbody>
</table>

Source: Sample survey, 2013
Reference category: 1-3

According to the above table, due to zero the first category of the variable of 'magnitude of household' which indicate the range of '1 - 3', it leads to decrease the whole parameter P - valueless than 0.05 (.000< 0.05). Thus, the variable of 'magnitude of household' is significance on the model of one variable. Further the categories of 4 – 6 and 7- 10 are significance when consider every categories as individual. The possibility of to be a child labour on magnitude of household such as '4 – 6', and '7 – 10' are increased by 4 times and 22 times respectively to the magnitude of household of 1 – 3. Economically, families which have more members, have to utilize more resources to maintain whole members. Allocation of family income for one member is lesser level when the magnitude of family is high. Thus it resulted to employment by children with other members of the family. Cristiaan and Kanbur (1995) represented that size of household as an internal factor to being a child to labour.

E. Model with employment status of the household head
The logistic regression model is identifying the relationship between employment status of household and child labour.

\[ \logit(\pi_i) = \beta_0 + \beta_1^{\text{better}} + \beta_1^{\text{moderate}} \]

Table 4: Model with employment status of household head

<table>
<thead>
<tr>
<th>Employment status</th>
<th>B</th>
<th>Wald</th>
<th>P value</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>.157</td>
<td>1.204</td>
<td>.272</td>
<td>1.169</td>
</tr>
<tr>
<td>Self employed</td>
<td>1.743</td>
<td>6.733</td>
<td>.009</td>
<td>5.714</td>
</tr>
<tr>
<td>Labour</td>
<td>3.024</td>
<td>19.202</td>
<td>.000</td>
<td>20.571</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.232</td>
<td>8.228</td>
<td>.004</td>
<td>.292</td>
</tr>
</tbody>
</table>

Source: Sample survey, 2013
Reference: Government

According to the above table, due to zero the first category of the variable of ‘employment status of household head’ which indicate the range of ‘government, it leads to decrease the whole parameter P - valueless than 0.05 (.000< 0.05). Thus, the variable of ‘employment status of household head’ is significance on the model of one variable. Further the categories of self-employed and labour are significance when consider every categories as individual and the category of private not significance as an individual category.

F. Model with attitudes of the household on education
The logistic regression model is identifying the relationship between attitudes of the education of household and child labour.

\[ \logit(\pi_i) = \beta_0 + \beta_1^{\text{better}} + \beta_1^{\text{moderate}} \]

Table 5: Model with attitudes of the household on education

<table>
<thead>
<tr>
<th>variable</th>
<th>B</th>
<th>Wald</th>
<th>P value</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate attitudes on education</td>
<td>1.243</td>
<td>8.743</td>
<td>.003</td>
<td>3.467</td>
</tr>
<tr>
<td>Constant</td>
<td>-.582</td>
<td>4.127</td>
<td>.042</td>
<td>.559</td>
</tr>
</tbody>
</table>

Source: Sample survey, 2013
Reference category: Better education

According to the above table, due to zero the first category of the variable of ‘attitudes on the education of household’ is ‘better’, it leads to decrease the whole parameter P – value less than 0.05 (.003< 0.05). Thus, the variable ‘attitudes on the education of household’ is significance on the model of one variable. The possibility of child labour due to attitudes on the education of household is increased by 3 times when moderate
attitudes. According to the Lawuo (1978) identified that attitudes on the education of household is core factor to determine child employment. A negative attitude on education has highly affected to be child labour. Thus the finding of research is same as past findings.

G. Model with Facilities available in the household
The logistic regression model is identifying the relationship between facilities available in the household and child labour.

\[
\text{logit}(\pi_i) = \beta_0 + \beta_i^{\text{agree}} + \beta_i^{\text{moderate}} + \beta_i^{\text{disagree}}
\]

Table 6: Model with facilities available in the household

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Wald</th>
<th>P value</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>facilities available in the h/h</td>
<td>18.956</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>1.239</td>
<td>5.793</td>
<td>.016</td>
<td>3.453</td>
</tr>
<tr>
<td>Disagree</td>
<td>2.849</td>
<td>17.098</td>
<td>.000</td>
<td>17.267</td>
</tr>
<tr>
<td>Constant</td>
<td>-.903</td>
<td>8.700</td>
<td>.003</td>
<td>.405</td>
</tr>
</tbody>
</table>

Source: Sample survey, 2013
Reference : Agree

According to the above table, due to zero the first category of the variable of ‘facilities available in the household’ is ‘better’, it leads to decrease the whole parameter P – value less than 0.05 (.00< 0.05). Thus, the variable ‘facilities available in the household’ is significance on the model of one variable. The possibility of child labour due to attitudes on the education of household is increased by 3 times under moderate attitudes and 17 times due to disagree when the reference category is zero.

I. Model with Education level of the household head
The logistic regression model is identifying the relationship between Education level of the household head and child labour.

\[
\text{logit}(\pi_i) = \beta_0 + \beta_i^{\text{below 5}} + \beta_i^{6-10} + \beta_i^{11-\text{pass O/L}} + \beta_i^\text{A/L} \text{ - above}
\]

Table 7: Model with education level of the household head

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Wald</th>
<th>P value</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>education level of the H/H</td>
<td>36.872</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 5</td>
<td>4.063</td>
<td>19.442</td>
<td>.000</td>
<td>58.125</td>
</tr>
<tr>
<td>6 – 10</td>
<td>3.168</td>
<td>16.498</td>
<td>.000</td>
<td>23.759</td>
</tr>
<tr>
<td>11 – pass O/L</td>
<td>1.200</td>
<td>2.769</td>
<td>.096</td>
<td>3.321</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.048</td>
<td>14.855</td>
<td>.000</td>
<td>.129</td>
</tr>
</tbody>
</table>

Source: Sample survey, 2013
Reference : Passed A/L and Above

According to the above table, due to zero the last category of the variable of ‘education level of the household head’ is ‘Passed A/L and above’, it leads to decrease the whole parameter P – value less than 0.05 (.00< 0.05). Thus, the variable ‘Passed A/L and above’ is significance on the model of one variable. Further the categories of below 5, 6-10 are significance and 11 – pass O/L is not significance when consider every categories as individual. The possibility of child labour due to education level of the household head is increased by 58 times under the education level of ‘below 5’. As well as under the 6-10 education level of the head of household, it will be resulted to increase the child employment by 23 times.

Model with more variables
In this step used whole variables which are significance with null model.

J. Model with two variables
In this step study on models which more than one variable that are significance with null model. First, select the best model with two variables. ‘Education level of household head’s (a)’ and ‘income level of household (b)’ are identified as the best model.

\[
\text{logit}(\pi_i) = \beta_0 + \beta_i^a + \beta_j^b
\]

Table 8: Best model with two variables

<table>
<thead>
<tr>
<th>variable</th>
<th>B</th>
<th>Wald</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education level of the H/H</td>
<td>18.215</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 5</td>
<td>3.713</td>
<td>10.481</td>
<td>.001</td>
<td>58.125</td>
</tr>
<tr>
<td>6 – 10</td>
<td>2.862</td>
<td>15.460</td>
<td>.000</td>
<td>23.759</td>
</tr>
<tr>
<td>11 – pass O/L</td>
<td>1.692</td>
<td>3.541</td>
<td>.060</td>
<td>3.321</td>
</tr>
<tr>
<td>Level of income</td>
<td>15.218</td>
<td>.002</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
K. Saturated model with three variables

Education level of the household head \( (a) \), Level of income of household \( (b) \) and attitudes of the family on education \( (c) \) are selected for the model which includes three variables according to the lowest deviance statistic as follows.

\[
\logit(p_i) = \beta_0 + \beta_a a + \beta_b b + \beta_c c
\]

The model which includes only three variables are identified as saturated model among the all variables.

\[a – \text{Education level of the household head } b - \text{Level of income of household } c - \text{Attitudes of family on education}\]

Table 9: Saturated model with three variables

<table>
<thead>
<tr>
<th>variable</th>
<th>B</th>
<th>Wald</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education level of the H/H</td>
<td>13.799</td>
<td>.003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 5</td>
<td>3.58</td>
<td>11.66</td>
<td>.00</td>
<td>36.16</td>
</tr>
<tr>
<td>6 - 10</td>
<td>2.573</td>
<td>10.954</td>
<td>.001</td>
<td>13.105</td>
</tr>
<tr>
<td>11 – pass O/L</td>
<td>1.104</td>
<td>5.042</td>
<td>.025</td>
<td>3.016</td>
</tr>
<tr>
<td>Level of income</td>
<td>12.675</td>
<td>.005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 – 10000</td>
<td>3.534</td>
<td>11.272</td>
<td>.001</td>
<td>34.261</td>
</tr>
<tr>
<td>11000 – 15000</td>
<td>2.604</td>
<td>7.564</td>
<td>.006</td>
<td>13.518</td>
</tr>
<tr>
<td>16000 - 20000</td>
<td>1.909</td>
<td>11.170</td>
<td>.001</td>
<td>6.746</td>
</tr>
<tr>
<td>Moderate attitudes on education</td>
<td>2.315</td>
<td>6.366</td>
<td>.012</td>
<td>10.125</td>
</tr>
<tr>
<td>Constant</td>
<td>-9.443</td>
<td>13.426</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: Sample Survey, 2013
Reference category: Passed A/L and Above, 21000 - 30000

Table 9: Saturated model with three variables

VII. CONCLUSION

The results of the survey revealed that child labour is primarily caused by poverty in the study area. Parents of child labours are received lower level of income compared with the parents of non-child labours. The income is not enough to maintain family needs and wants. It leads to exploitation of children’s time for employment instead of schooling or education.

Education level of household heads also has negative relationship on child labour. The parents of child labours not more consider about the value of the education. Lower levels of education of parents have higher possibility to make their children with employment. The education will be the key of making skills and capacity of persons. On the other hand it is linked with income level of persons or family. Lower level of education of the family will make the worst form of attitudes on education. The lacks of supports of household on education are resulted to make low motivation of children to do studying. Thus the time of schooling will convert to employment activities. The good attitudes on education of the family reduce child employment and increase the schooling. Magnitude of the household is one of affected factor to engage children in employment. Child labour rate is high when the members of family more than considerable amount compared with families that have fewer members. The income of the family not sufficient to maintain even day to day needs. Thus it is a path for child labours. Employment status of head of the family makes negative impact on children’s employment. Many of child labour can be seen where the heads are self-employed workers or businessman. The income of such families is relatively lower level than where heads are employed in government or private sector. Many of temporary employment opportunities are available in business or self-employment sector.

Thus children have opportunity to engage with such kind of employment under the permission of parents or not. The family with child labour has lack of infrastructure compared with non labour families. Thus the lower facilities availability in household are affected to child employment. Child employed due to income difficulties of the family. According to above mentioned factors the income level of the family are affected and highly significance to be child a labour. Poverty is the main reason for that, and lower education of household head positively related with income level and income gap make poverty of the family. Child employment is a one of worst form reasons to reduce of school attendance or completely drop out of children from schooling. Income level is one of main reasons to that which is directly or indirectly occurred. Lower income resulted to determine the
children employment and finally it causes to leave or drop out of school. On the other hand working hour or working schedule also has higher contribution to reduce number of school days of children. Work more hours and work at school time are main reasons to that. Children who work more hours have positive trend to face illnesses or injuries. It resulted to reduction of school days compared with non-child labors.

Improving the local Economy, Increasing access and relevance of education ,Develop Vocational and Technical Education ,Making, restructuring and enforcing laws on child labour are some policy implications to reduce the issue of child labour.

REFERENCES


BIOGRAPHY OF AUTHORS

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Factors Affecting the Patients’ Decision in Selecting a Hospital in Medical Emergency

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Abstract - Selecting a hospital in a medical emergency is a critical decision for any patient or patient’s guardian. Though there are many researches done on this subject in developed countries, there have been no studies done in Sri Lanka. As Sri Lanka did not have a structured emergency medical care setup covering the entire island, it was quite interesting to explore the factors which influenced a patient or patient’s guardian in selecting a hospital for a medical emergency. Generally, private hospitals in Colombo have better facilities for medical emergency patients than the state sector hospitals. In spite of facilities provided, many patients sought the services of state sector hospitals in medical emergencies. This study was done to establish the reasons for above mentioned situations. The patients admitted for medical emergencies to the National Hospital of Sri Lanka (NHSL) and Lanka Hospitals (LH) were considered for this study. Fifteen percent of the medical emergency patients of NHSL and LH in the first week of April 2014 were randomly selected for this study. Based on the above percentages, data was collected pertaining to 166 patients out of 1,036 emergency patients of NHSL and 40 patients out of 266 emergency patients of LH. The collected data was analyzed using SPSS version 16. Nominal and ordinal scale data were reported as absolute and relative frequency. The study revealed that a patient or patient’s guardian considered several factors when selecting a hospital in medical emergencies. The study explains that the most important factor in choosing a hospital for medical emergencies was the reputation of the hospital in handling the medical emergencies. Further, non-availability of health insurance coverage and un-affordability for charges, were the other major reasons for selecting NHSL in medical emergencies. The study revealed that the patients preferred NHSL than private hospitals in Colombo when there was a medical emergency, due to the above mentioned factors. Further, the medical emergency patients of NHSL were satisfied with their treatment than the patients of LH. If a private hospital in Colombo expects attracting more medical emergency patients, it should concentrate on the factors which improve the reputation of its’ Emergency Department (ED). This can be achieved through research based interventions on the areas of patients’ concerns in relation to the Emergency Department of the hospital.

Keywords: patients’ decision, medical emergency, reputation of Emergency Department

I. INTRODUCTION

Selecting a hospital in a medical emergency is a critical decision as it has a direct bearing on the clinical outcome of the patient. One state owned hospital, namely National Hospital of Sri Lanka (NHSL) and one private hospital, namely Lanka Hospitals (LH), were selected for this study. These two hospitals can be considered as the hospitals that represented the salient features of the state healthcare sector and the private healthcare sector of Sri Lanka. More than 25% of inpatient admissions of NHSL and LH were considered as medical emergencies, and these patients were admitted through the Emergency Departments of these two hospitals. Generally, hospitals should have a dedicated clinical setup to accommodate medical emergency patients, as their requirements are very different to any other patient group. These special requirements include less waiting time, efficient ED processes, availability of on-call medical specialists, courtesy of physician and the standard nursing services and ED environment.

When a patient selects a hospital for an elective medical treatment, the patient or patient’s guardian has the luxury of researching the standards of medical care of hospitals and make a rational selection. In a medical emergency, a patient or patient’s guardian has a shorter duration in making a decision for their choice of a hospital. A dedicated Emergency Department setup in a selected number of hospitals covering all
geographies of the country is the ideal arrangement for handling medical emergencies for any country. This type of setup can be seen in developed countries. Although Sri Lanka has achieved a number of important healthcare goals in many areas including life expectancy, child mortality rate etc. the patient management in medical emergencies has not been developed to the required level. By considering this situation, it is quite interesting to know on what basis a patient or patient’s guardian selects a hospital in a medical emergency, and whether they make a rational decision in selecting a hospital in medical emergencies.

Another salient feature is that the majority of the medical emergency patients prefer the state sector hospitals than the private hospitals. This is quite a different situation compared to any other healthcare segments such as primary health care, family healthcare service, diagnostic services, pharmacy and dental services, where private healthcare industry dominates over the state sector hospitals. By considering these ground realities, it is quite essential to establish the factors considered by a patient or patient’s guardian in selecting a hospital in medical emergency and the failure of the private sector hospitals in Colombo in attracting the medical emergency patients, though they have better medical technologies, infrastructures and facilities than the state sector hospitals.

II. LITERATURE REVIEW

Selection of a hospital in a medical emergency is a critical decision for a patient or patient’s guardian in Sri Lanka as there is no structured emergency medical setup covering the entire island. Under this circumstance, patients may go to the nearest government or private hospital. The research failed to find any study done in Sri Lanka on the subject of a patients’ decision in selecting a hospital in a medical emergency and why patients sought the services of state sector hospitals rather than private hospitals in a medical emergency. Calnan (2007) found that the social circumstances might be an important influence in selecting a hospital in a medical emergency. This study had covered all forms of hospitals including state owned, teaching, trust owned, military etc. Luft et al (1993) highlighted that quality standards played a major role in selecting a hospital in a medical emergency among several choices. This study did not concentrate on important factors such as affordability and patients without health insurance cover.

Gowrisankaran (2003) found that the increasing competition among private hospitals in the United States of America might reduce the quality of medical care and welfare. This study explored the choice of selecting a hospital in a medical emergency from the point of view of clinicians. Puig-Junoy et al (1998) had mentioned that the demands by low and middle income groups for emergency medical services were highly sensitive to travelling and waiting times. Further, the demand for emergency services was highly elastic with respect to the waiting time in primary healthcare setups. The problem covered by this study was to identify the factors considered by the patient or patient’s guardian in selecting a hospital in a medical emergency. Soleimnpour (2011) found that the hospitals would rely on research-based interventions in areas such as clinical care processes, nursing services, staff’s behaviour and treatment of patients, physical environment and waiting time if a private hospital wanted to attract more emergency patients.

III. METHODOLOGY

a. Sample
A prospective, cross sectional, cohort study was conducted by covering the patients who visited the Emergency Departments of NHSL and LH. This study was carried out in the first week of April 2014 and covered all nursing shifts namely morning, afternoon and night. It was expected to nullify biasness in survey interviews by designing the survey setting based on the shift. Fifteen percent of the emergency patients who visited the two hospitals during the surveyed week were involved in the study. Data of 166 patients out of 1,036 emergency patients of NHSL and 40 patients out of 266 emergency patients of LH were collected. The quotas given for morning, afternoon and night shifts were 35%, 35% and 30% respectively.

b. Instrument
The survey included three demographic questions and five scenario based questions, with multiple choices to be chosen. Last five questions were designed with the intention of understanding a patient’s reason for selecting a particular hospital in a medical emergency.
c. **Data collection**

The patients were interviewed by an experienced research assistant, at the time of releasing the patients from ED, either as an inpatient or a discharged patient. The interviews were conducted either in Sinhala or English. The patients were briefed about the purpose of the study and they were given the freedom of participating for the survey.

d. **Data analysis**

The collected data were inspected, cleaned and modelled in order to generate meaningful information. The collected data was analysed using SPSS version 16. Nominal and ordinal scale data were reported as absolute and relative frequency. The data were analysed descriptively and the relationships between various variables were investigated by Pearson’s Chi Square test.

IV. **RESULTS**

The survey included 166 patients of NHSL and 40 patients of LH. The demographic details of the patients included in the survey are as follows.

a. **Demographic characteristics**

The first question of the questionnaire captured the gender of the interviewed patients. The patients selected for this study in both hospitals included 41.71% males and 58.29% females.

1) **Distance to the hospital from the place of medical emergency (Fig. 1):** It was clear that most of the patients were living or working at a location closer to the chosen hospital, and the flow of patients to ED reduced with increasing the distance from the hospital.

2) **Age of the patients (Fig. 2):** Irrespective of the hospital type, majority of the emergency patients belonged to the age group 0-20 years. 44% of the emergency patients of NHSL were over 50 years. Only 23% of the emergency patients of LH were over 50 years.

b. **Subject related findings**

3) **Reason for medical emergency (Fig. 3):** NHSL and LH receive patients with very similar disease related conditions. As NHSL did not accept paediatric and obstetric patients, data was not obtained for those disease conditions. The main cases for medical emergencies of NHSL and LH were for surgical, respiratory and gastrointestinal tract related diseases.
4) Choosing a hospital in a medical emergency (Fig. 4): Interestingly, the patients admitted to NHSL and LH believed that they had chosen the best hospital for their medical emergency. 35.2% and 30.0% of the patients of NHSL and LH respectively, believed that the chosen hospital was the best place for medical emergency respectively. 33.9% of the emergency patients of NHSL indicated that un-affordability and non-availability of health insurance coverage were the reasons for their choice in being admitted at NHSL. 37.5% of the patients of LH indicated that as they could afford or had health insurance cover for their emergency treatment at LH.

V. DISCUSSION

This study clearly confirmed that the influx of emergency patients to a hospital decreases as the distance from the patients’ residence or the place of accident to the hospital increases. This finding confirmed the study done by Puig-Junoy et al. (1998) which explained that the demand by low and middle income groups for medical emergency services was highly sensitive to the distance of travel. Majority of the emergency patients of NHSL and LH were below the age group of 20 years. This was a significant difference from the general perception. Another finding was that LH receives a lower percentage of emergency patients of over 50 years when compared to NHSL. This might be due to the fact that the local insurance companies do not offer corporate health insurance policies for this age group. The surgical conditions were the main cause for medical emergencies in both NHSL and LH. The respiratory and intestinal tract related diseases were the second highest group of patients who visited the ED. Cause of medical emergencies as per the patients who visited NHSL and LH showed a similar pattern. These findings were very similar to the classification of emergency patients by Derlet (2011). More than half of the emergency patients admitted to NHSL and LH were reluctant to recommend the hospital chosen by them to others. The cause for this finding should be addressed by another study.
1) Association between the reason for choosing a particular hospital in medical emergency and the disease condition of the patient: A chi square test has been conducted using SPSS version 16 in order to investigate whether these two variables had an association.

Table 1. Chi Square Test

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>17.946a</td>
<td>12</td>
<td>0.117</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>17.490</td>
<td>12</td>
<td>0.132</td>
</tr>
<tr>
<td>Linear-by-Linear Assoc</td>
<td>0.224</td>
<td>1</td>
<td>0.636</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>199</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Since p value is greater than 0.05, the null hypothesis (H₀) is not rejected. Therefore, there is no association between the reason for choosing a particular hospital in a medical emergency in relation to the disease condition of the patient.

2) Association between the reason for choosing a particular hospital in a medical emergency and the willingness to recommend the chosen hospital as the best place for medical emergency: A chi square test has been conducted using SPSS version 16 in order to investigate whether these two variables had an association.

Table 2. Chi Square Test

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>5.429a</td>
<td>8</td>
<td>0.711</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>5.323</td>
<td>8</td>
<td>0.723</td>
</tr>
<tr>
<td>Linear-by-Linear Assoc</td>
<td>.008</td>
<td>1</td>
<td>0.930</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>199</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Since p value is greater than 0.05, the null hypothesis (H₀) is not rejected. Therefore, it could be concluded that there is no association for the reason of choosing a particular hospital in medical emergency in relation to the willingness to recommend the chosen hospital as the best place for medical emergency.

VI. LIMITATIONS

The study has a few limitations. First of which is that the study was conducted only in two hospitals, namely National Hospitals of Sri Lanka and Lanka Hospitals. This limited the ability of the results to be related to other government and private hospitals in Colombo. Another limitation is that the data collected was done in a period of one week. If the duration of the data collected was extended further, the results could be generalized by removing the seasonality effect.

VII. CONCLUSION

The findings show that a patient or patient’s guardian considered the reputation of the hospital as the most important factor when choosing a hospital in a medical emergency. If a private hospital in Colombo wants to attract more emergency patients, it has to enhance the perception of its Emergency Department. This can be achieved through a research based intervention on the areas of the patients’ concerns in the Emergency Department of that hospital.

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BIOGRAPHY OF AUTHOR

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Sociological Study on the Female Stereotypes in Sri Lankan TV Commercials

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Abstract— Common female stereotypes found in the media have a powerful influence over how society views women and how women view themselves as a whole. A Stereotype is a rigid and inflexible image of the characteristics a group. It attributes these characteristics to all individuals belonging to that group with positive and negative impacts. Thus, the main objective of the present study is to examine the impact of Sri Lankan TV commercials on generating and reflecting the female stereotypes in the society. This content analysis is conducted by employing 100 advertisements selected under purposive sampling method, which has telecasted in the ITN channel from 01st September - 30th September 2012. The study is limited to ITN, as commercials telecast in TV channels generally similar in nature. Furthermore, ITN has undergone some notable changes to compete with other TV channels and gained much attraction from audiences and came top of the rank in the television awarding ceremonies within the recent years.

According to the research findings, 69% of women in the advertisements were attached to household activities by impounded them in conservative portrayals of the private sphere, while presenting men as an incompetent for those. Female images in the advertisements tend to undervalue women as whole, and diminish them to sexual objects and passive human beings by adding desirable physical characteristics include being thin, long-legged, slim-hipped in 71% of commercials. Furthermore, purpose of commoditisation of the female body, it has used 35% of Indian and 10% of European advertisements. Traditional village beauty is highlighted in the most local commercials. In 52% of advertisements women were represented as helpless beings depending on male power and knowledge. This creates very low expectations, especially for adolescents and their role models. Accordingly, most of the advertisements clearly reflecting the existing gender inequalities and maintain the status quo. These negative stereotypes inevitably affect our cultural values and norms through the socialization process. Thus, it is needed some unbiased practice and policy framework in creating TV commercials in Sri Lanka.

Keywords— Stereotype, Commoditisation, Socialization

I. INTRODUCTION

Female and Female body is used as medium to persuade an audience to purchase products by the contemporary television advertisements. According to Poornima Pokharel, “advertisement is a form of communication intended to convince viewers, readers or listeners to purchase or take some action upon products, ideals or services. Advertising includes the name of a product, its narrative, how that product could benefit the targeted consumer along with its symbolic meanings” (https://www.academia.edu/1929940/Stereotype_representation_of_female_body_in_advertisement... .......). The aim of the modern TV commercial is not only the satisfaction of needs but also their creation. For Ervin Goffman, advertisements offer highly stylized versions of social mores, definitions, attitudes, values and behavioural tendencies whose meanings must be clear enough to be interpreted in an instant (Shields, 2002: 37).

Thus, advertisers commonly use stereotypes for conveying their messages to audiences very easily. Stereotype is a shortcut with reference to the world. In other words, stereotypes are effective vehicles of representation as the media communicate with their audiences through the process of representation. By using familiar signs and symbols, they create a representation of reality (Marsha and Jones. 1999: 103). There are several aspects of this process of representation. It always portrays as natural, focus on groups and inevitably...
ideological. In general terms stereotypes are attached with negative meaning. Because, they are often confused with prejudices, because, like prejudices, a stereotype is based on a prior assumption (http://examples.yourdictionary.com/Stereotypeexamples.html). Stereotypes are created by the continual, extended exposure of consumers to patterns of imagery. Among the many stereotypes used by the media, gender stereotyping comes to the first place. This is a highly critical issue among feminists who interest in the media studies.

However, using women or female images for the TV commercials is not a wrong doing, but the way of doing is problematic as it largely creates negative impact. This is the reality one should undergo in an investigation. We need to question whether these female stereotypes represent the reality or not. It has already proved by many researchers that, there is a given agenda on representing women in the media. This is none other but came through evolution of societies in the era of capitalism and the post modern societies in the long sweep of history.

II. OBJECTIVES

According to the general assumption, women are treated differently and not fairly in the media. It reflects gender stereotypes, which have negative impacts on society as a whole. The audience usually accepts these stereotypical implications as natural. Women are represented in stereotypical ways, according to social ideologies and it has made the society to consider it as natural. Therefore, these complexities of representing women in the media going to be questioned in this research paper. The main objective of the present study is to examine the impact of Sri Lankan TV commercials on generating and reflecting the female stereotypes in the society. To gain the main objective it is intended to find out the stereotypical representation of women in the TV commercials. And to study how these stereotypical images portrayed conservative gender inequalities.

III. RESEARCH METHODOLOGY

The content analysis method is used for this study. Bernard Berelson defined Content Analysis as “a research technique for the objective, systematic, and quantitative description of manifest content of communications” (Berelson 1952: 74). Content analysis is a research tool focused on the actual content and internal features of media. It is used to determine the presence of certain words, concepts, themes, phrases, characters, or sentences within texts or sets of texts and to quantify this presence in an objective manner (https://www.ischool.utexas.edu/~palmquis/course/content.html).

100 advertisements telecasted in the ITN channel from 01st September - 30th September 2012, selected under purposive sampling method. Specifically, ITN has selected as the television channel, as ITN depicted of undergoing some notable changes within recent years to compete with other TV channels and came to top rank in the television awarding ceremonies. In other words, it has concerned about the attraction of the audience when it was to select the TV channel. Advertisers themselves concern about it, prior to putting their advertisements in those respective channels. However, most of the advertisements telecasted in TV channels were similar. This content analysis is conducted by creating manageable categories and themes by observing the advertisements. For instance, Language, facial expressions, symbolic gestures, behaviours, clothing and adornments, fashion ideas, tradition vs. modern, local and foreign, music, etc. were used as categories and women’s role, women as sex objects, commodifying female body etc. were used as the themes. It helped to code the data and interpret the identified patterns by doing so.

IV. DISCUSSION

When it comes to the findings of this study, women are the central figures of most of the advertisements. Although 56% of advertisements were locally produced, most of them were structurally looks like foreign. Because, it may be that people as consumers may fond of using foreign goods and services than local products. Total foreign advertisements were 44% as shown in the below figure. Inevitably these foreign advertisements are affecting to our own cultural values and norms, even in the case of gender. However, using foreign commercials is considering as the easiest and cheapest way of advertising. Transnational co-operations (TNCs) and Multinational co-operations (MNCs) are using these foreign advertisements largely.
Generally, young women in 18-35 age category seems to use for most of the advertisements even it was needed to portray a matured woman. 71% of women were portrayed as married and housewives. They portrayed as spending a happy time involving in various domestic tasks including using washing powder for washing clothes, making meals and cleaning etc. Women are portrayed as good wife/mother who serves for her nuclear family mostly with handling domestic work. For instance, in “Laogi” and “Nestomalt” advertisements although women have done bulk of domestic work she is to wait with a tea while husband comes home after work. The female domestic consumers are targeted by this type of stereotypical assumptions as domestic labourers.. Further, Milk powder advertisements (“Anchor”, “Raththi”), Baby products (“Baby Cheramy”, “Pears baby” etc.) comes under this ‘good wife: a happy housewife’ category. But it has never concern about the needs of the housewife and the multiple roles played by her.

Women are responsible for all domestic work. If she fails to perform these entire tasks, often they portrayed as helpless in sorrowful faces. In the same occasion husband was representing as incompetent with those. For an example in “Iodex” advertisement, while wife is suffering from backache, husband is not able to even fry an omelette and help children to get ready to go to school. “We have become used to seeing images of women naturally working in the kitchen: more recent adverts that have placed men in the kitchen either serve to show how unnatural a setting it is for them, or that men use domestic labour as a means of obtaining rewards for women” (Marsha and Jones, 1999: 103).

Thus, media act as an agent of gender role socialization. Possible exception of family and peer groups as the socialization agents, the media probably the most powerful transmitters of gender stereotypes. Because there is a relationship between exposure to gender stereotypes in advertising and the cultivation among viewers of more traditional attitudes toward gender roles. According to the cultivation analysis theory, repeated exposure to media messages leads a person to hold opinions or views of society that can be discordant or distorted the reality (Katherine and Mueller, 2010). Thus, children easily internalize these media stereotypes of gender and perpetuate it and affects the very role played by them in future life. “Research suggests that while stereotypical representations may not induce product purchase, they do encourage viewers to internalize the socially constructed image of femininity presented in advertising, thus helping to define femininity and acceptable female roles” (Lafky, Duffy, Steinmaus, and Berkowitz 1996: 381). In other words, according to feminists, the media act as key agents in reinforcing and perpetuating a patriarchal society (Marsha and Jones. 1999: 111). Thus, the below figure is showing the female roles depicted by the advertisements.
knowledge. This creates very low expectations especially for adolescents and their role models.

Nowadays the differences between male and female roles are smaller and diminishing dramatically. However, mass media still perpetuates traditional gender stereotypes to fulfil their commercial purposes. In general, men still outnumbered women in advertisements in terms of occupational roles. Although women now engage in wide range of employments still there is an underrepresentation in the advertisements. Following two figures clearly shows it.

Figure 3: Female Professions depicted in Adds
Source: Research data, 2012

Figure 4: Activities engaged by women in ads
Source: Research data, 2012

In Sri Lanka large numbers of women are in the work force and women labour participation rate is 31.8% in 2011(http://www.cbsl.gov.lk/pics_n_docs/10_pub/__docs/statistics/other/econ_&_ss_2012.pdf).

Seemingly, increasing number of women are engaging in professional occupations like doctors, lawyers, executive etc. in present Sri Lanka. But, males were more likely than females to be doctors, lawyers, etc. in advertisements. The media presents only the stereotypical picture of women engage in domestic work. This is not something only about underrepresentation but also undervalue the contribution they made for the country's economy. Because present day women are not a dual role player, but the triple role including, employment, domestic work and community work. Although these multiple tasks were less concerned with the advertisers, reality couldn’t be hidden. But we need to careful as we live in a world which is increasingly saturated by media and communication technologies.

One of the major criticisms of advertising by the feminists is that, women's bodies were being used to sell everything from milk powder to tyre. Women are used in promoting male products like perfumes, gel, and even vehicle spare parts and the males think what is portrayed in commercials is the acceptance of females of that product and by believing it as the reality, they are motivated to use those.

To grab the viewers’ attention women’s bodies are sexualized in advertisements. The female body is the medium of conveying message to the audience. For an example, “Exide battery” advertisement, one woman was breakdown her car and two men were to help her. They used kind of vulgar language to verbally abuse her in the guise of helping her. It is a violation of law. Further she seems to try to get some attraction with her partly dressed. Female stands to arouse the sense of desire in man. Precisely she was depicted as an object of passion. To sell the products, women’s bodies are often dismembered into thighs, legs, breasts, stomach, midriffs, bare backs, partly clothed parts, reinforcing the message that women are objects rather than whole humans (https://www.academia.edu/1929940/Stereotype_representation_of_female_body_in_advertisement... ......). Women as a whole diminish to sexual objects and passive human beings by adding desirable physical characteristics include being thin, long-legged, slim-hipped in 71% of commercials. This is called as a commoditisation of the female body.
According to the above figure there were a number of more advertisements which used the female body as a sexual object. For instance, “Zesta tea” advertisements, here mainly used this erotic voice to grab the attention of audiences. Mainly most of the time women were attached to male figures. Further, most of the Sri Lankan advertisers would like to use the concept of village beauty of women. But this village beauty is mixed and beautify with modern western cosmetics. For example, in “Sunlight” advertisement, the girl in a chintz frock who represented as coming from a village background is not matched with her straitened and partly coloured hair. This type of hybrid fashion ideals, itself has an influence to the audience. Advertisers not only create such styles by mixing up Sri Lankan patterns but also the foreign. Youngsters catch fashion ideas and many more things through the media. The barrage of messages about thinness, dieting and beauty tells ordinary women that are always in need of adjustment. Thus, the advertisement is propagating unattainable beauty that is creating negative effects in the present society (https://www.academia.edu/1929940/Stereotype_representation_of_female_body_in_advertisement). They promote only young, beautiful and sexually attractive women. Researchers had pointed out that even those caused to some illness such as eating disorders among adolescents in western countries. Thus it proves that this is not something a trouble encountered by the Sri Lankan audience, but a common thing. Sut Jhally (2011) listed some portrayals of women in advertising:

- Touching self
- Caressing an object
- Lying on the floor
- Sitting on a bed or chair
- Eyes closed
- Not alert
- Confused
- Vulnerable
- Body contorted
- Dressed like a child
- Holding an object or a man for support
- Sexy and sexually available
- Seductive
- Playful
- Careless

All these were targeted on the commoditisation of the female body as depicting them as beautiful object of products Women’s bodies have adorned a wide array of products aimed at men. For instance, “Bic Races” advertisement, “Black Night” advertisement. Women in these advertisements depicted as passive in decorative sexual role as they are precisely presented as objects of the male gaze. In addition, women were sometimes used to sell products which their contribution should not need directly. The below figure clearly shows it.

![Figure 6: Women portrayed in directly unrelated products](https://www.academia.edu/1929940/Stereotype_representation_of_female_body_in_advertisement).

Data Source: Research data

Finally, uses of gender stereotypical images by the advertisers caused to marginalize, discriminating
and commodifying female. This is heavily criticized by various feminist scholars. Portraying women as almost dependent on male power is questioned by them. It is just not reflecting the things taking place in the society, but also they are creating new types of gender inequalities for the purpose commercial values. The time has come to rethink about the conservative malpractices in the field of television advertising as it has already encompassed the peoples' life by the media.

V. CONCLUSION

However, mass media not only gives people information and entertainment, but, according to a Canadian communication theorist Marshall McLuhan, it also affects people’s lives by shaping their opinions, attitudes and beliefs (1964) (Malgorzata, 2011). Thus, advertising act as mirrored images of the society. Therefore it merely not reflecting but reinforcing the existing stereotypical representation of the society. Commercials are the vast source of gender stereotyping. In other words, advertisements are “the reflection of the recipient”. As advertising is gendered, they address our physical senses of self, our knowledge of the world. In that sense, it is just going beyond representation, but moulding self identity.

Women are more often presented in commercials, because they are seen as responsible for making everyday purchases. The field of advertisement is male dominated where female are victims of the popular culture. Thus, women were depicted as more dependent and as the weaker sex. This cause to the underrepresentation and undervalue of the precious and multiple tasks which is performed by women in the society. The world is changing. Conservative views are largely challenged by the day today practices. This should clearly reflect by the media. Keeping the old conservative practices is kind of a threat to the social development, as we are a developing nation. Therefore, it is better to rethink of the good practice in creating gender neutral television advertisement in Sri Lanka. Although, the study is not going to demonstrate a generalized picture of present television commercials as a research limitation, precisely the study is going to emphasis on implementing a policy framework of unbiased gender practice for Sri Lankan TV commercials which pertinent authorities (government and nongovernment) should pay their attention. Finally, we have to be very careful when taking the foreign advertisements as there may be contradictions with Sri Lankan cultural values and norms. Thus, we do not need to import the foreign things, but can come across the practice for gender equality in media representation by turning back to our native morals.

ACKNOWLEDGMENT

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2Author has graduated from the Sabaragamuwa University of Sri Lanka. She obtained her BA special degree in Sociology and Anthropology. Her research interests include communication studies and gender. She did her higher studies in the Wattegama Balika Vidyalaya.
Disciplinary Enculturation in Critical Thinking: Do we adopt a Strategic Approach?

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Abstract — As critical thinking is a key of higher education, academics in various disciplines in Western universities strive to cultivate disciplinary based critical thinking by introducing subject specific knowledge and allowing students to apply these skills in a broader physical and social context. Such a task is equally challenging in postgraduate and undergraduate courses. While some research studies found students from Asian contexts demonstrate poor critical thinking, some research points to the cultural differences in thinking and limited students’ limited skills to use English as the academic lingua franca. Asian universities must consult this debate to examine the validity of these dichotomous views. The present study investigated macro and micro strategies that academics adopt in their teaching and assessment procedures to enhance students’ critical thinking skills at an Australian university in the schools of Physical Sciences, Engineering, Humanities and Business. The study included 20 in-depth interviews with academics and the qualitative analysis of 20 summative and formative assessment tasks. The study shows that critical thinking is an essential component in transforming students to be workplace ready in their fields. Thus, academics adopt particularly designed pedagogical strategies to cultivate critical thinking in their majors. The study indicates several challenges in developing disciplinary focused but holistic thinking with a subtle shift between scaffolded activities and independent learning. The study provides implications for pedagogy and curriculum measures for any higher education context.

Keywords: Critical thinking, pedagogy, enculturation

I. INTRODUCTION

Critical thinking is an advanced cognitive skill that is integral to human ability but people need to cultivate this skill to face the world with an understanding and a critical mind set. One could advance their critical thinking skills during their socialization process but the skills that people unconsciously develop by interacting with the environment are inadequate to address the challenges in the modern society. Education theories such as constructivism (Twomay Fosnot, 1989) advocate the importance of fostering critical thinking in education curricula to equip students with their reasoning and analytical skills. Richards (2001) suggests that the responsibility of developing critical thinking lies with the formal education systems, particularly the higher education to foster and nurture these skills. Most formal educational programs, all over the world, seem to offer opportunities to develop critical thinking skills, by embedding critical thinking in disciplinary specific teaching, such as engineering (Niewoehner, 2006) and English language teaching (Thompson, 1999). Recent English for Academic Practice (EAP) research and practice have recognized EAP as an appropriate venue for the development of critical thinking skills while also enhancing language learning (Thompson, 1999; Paton, 2010). However, there is limited research on how current higher educational programs adequately facilitate students’ learning.

Moreover, research shows dichotomous views about critical thinking skills of non-western learners because of the culturally different pedagogies (Durkin, 2010). Limited research addresses these issues and Gunawardena & Petraki (2014) report several challenges and tensions in embedding critical thinking focused tasks in EAP teaching in Sri Lanka. Their study shows that teachers need to be equipped with skills in incorporating critical thinking focused tasks in teaching EAP and other disciplinary subjects. The empirical study, reported in this paper, evaluates the pedagogical and assessment strategies used for enhancing university students’ critical thinking skills in four schools in one university in Australia.
This paper will firstly discuss the importance of critical thinking skills and the debate about students’ skills about Western and non-western contexts to illustrate the need for enhancement in critical thinking practice. Secondly, it will describe the process of data collection and analysis conducted in this study. Finally, it will examine the findings of this study providing implications for a critical thinking based pedagogy. The paper will then provide implications and recommendation for Asian education followed by a brief conclusion to this paper.

II. CRITICAL THINKING IN ACADEMIA

Critical thinking is considered an important general skill for successful completion of a higher degree course in the Western context as well as in the Asian contexts (AQF and SQEF). However, critical thinking is known as the preserve of the Western education (Paten, 2010) and thus these views have led to underestimate skills of Asian students (Kumaravadivelu, 2003). Recent studies such as Durkin (2010) based on Asian students indicate that there is a significant deficit in attention to critical thinking in Asian educational practices. As a result of this, Asian students who study in Western contexts get special attention and they are required to complete special courses to gain knowledge and skills in these areas. Durkin’s (2010) study presupposed that Asian learners lack critical thinking and explored how Asian Masters’ students in the UK to adapt to Western education styles. To address these plaguing criticisms, some contexts such as Singapore and China have explicitly embedded critical thinking focused tasks in their courses.

Kumaravadivelu (2003) argues that critical thinking debate has led to put Asian students into cultural stereotypical basket. He emphasises the fact that Asian students immensely suffer due to their inadequate English competencies. Also this lack of critical thinking may be a concern only for a few students that is being exaggerated by Western researchers or it is just a stereotypical labeling as Kumaravadivelu claims. However, a study by Gunawardena & Petraki (2014) identified several challenges and tensions that Sri Lankan EAP teachers encounter in embedding critical thinking in their teaching. Therefore, teachers would indeed benefit by examining other colleagues do in global contexts to promote deep thinking skills of their learners. This paper aims to provide several suggestions for enhancing critical thinking in academia.

One major issue that has resulted in a lack of understanding of critical thinking is how academics define critical thinking. It is used as a buzz word in many courses in academia and academics have their own perspectives about what critical thinking is. As Ennis defines critical thinking is “reasonable reflective thinking that is focused on deciding what to believe or do” (1989, p. 10). Ennis highlights the need for having reasonable or reliable premises for a decision or a belief that one arrive at in a particular context.

As Halpern (1997) defines critical thinking is a cognitive skill used to “increase the probability of a desirable outcome” and therefore it “Self-directed, self-disciplined, self-monitored and self-corrective thinking” Paul and Elder (2000). Critical Thinking involves numerous cognitive skills and therefore, students should these skills develop in their learning. They should be able to examine an issue or a concept through a critical eye and present a balanced argument that is being viewed from different perspectives without being biased on what is given even in an academic text. Intellectuals need to develop this skill in order to perform well by recognizing pros and cons of an action or a deed which will assure better practice. Therefore, developing critical thinking has a practical relevance and indeed useful for any one in any context.

Critical thinking is a relevant topic for investigation and it is a skill that needs cultivation in any context. Well-cultivated critical thinkers seem to act appropriately and professionally when making decisions and many developing countries need highly efficient thinkers who make wise and apt decisions for the betterment of the entire nations. Sri Lanka is poor developing country which has a higher literacy rates. Ongoing civil war had held it back from its development in the past and now it is regaining power relations in the international community. Therefore, it is imperative to offer an opportunity for a dialogue to encourage tertiary education contexts pay explicit attention to develop critical thinking skills of their students.

The important questions that emerge in this discussion are how and when critical thinking is
taught in educational programs. As critical thinking is an advanced skill, it may be highlighted in the tertiary education than in all other contexts. However, it is difficult to assume how other educational contexts organize their teaching without much prominent research about those contexts.

Teaching approach to critical thinking and assessment can occur differently in each discipline of education. For example: 1) In mathematics: using thinking to apply mathematical principles in realistic situations and solve mathematical problems. 2) In science: using critical scientific thinking to solve scientific problems and being able to analyze the validity of a theory. 3) In humanities: ability to recognize and evaluate strengths and problematic areas in relation to a particular concept or an issue. However, only a few studies investigate the pedagogy used in cultivating critical thinking. Therefore, the study reported in this paper examined pedagogical strategies and formative and summative assessment tasks used by experienced academics in a Western context to cultivate students’ critical thinking. The findings will provide other higher education contexts opportunities for curriculum mapping and also it will provide a platform for academics to evaluate and reflect on their own pedagogy and assessment.

IV. RESEARCH QUESTIONS

The study basically focused on the following research questions:
1. What instructional strategies are used for CCT in academic disciplines?
2. What assessment strategies are used to assess developing CT skills?
3. What challenges are encountered in CCT in the higher education context?

V. METHODOLOGY OF THE STUDY

This paper reports on a mixed methods study that adopted 20 semi-structured interviews with experienced academics from four schools (Physical Sciences, Engineering, Humanities and Business) in a university in Australia. The major aim of the semi-structured interviews was to enable academics to describe their pedagogical interventions, assessment procedures and their tensions and challenges in regard to developing critical thinking, particularly in their courses. The interviews were audio recorded, transcribed and analysed using semantic analysis. In addition, the critical thinking focused assignments were analysed making judgment of the cognitive and other related skills involved in completing them. Interviews are useful tools in qualitative research as they are more grounded and they allow the researcher to elicit human experience, viewpoints and attitudes towards a certain social concept. As Cohen et al. (2000) note, “interviews enable participants - to discuss their interpretations of the world in which they live, and to express how they regard situations from their own point of view” (p. 367). Therefore, researchers can find out what people commonly believe and they gain valuable insights into the important issues regarding a particular concept or topic. Interviews may be invaluable in some research studies depending on the specific research studies. Interviews provide access to what is inside a person’s head and make it possible to measure what a person knows (knowledge or information), what a person likes or dislikes (values and preferences) and what a person thinks (attitudes and beliefs). The study also analysed 15 formative and summative assessment tasks for arriving at conclusions.

VI. FINDINGS AND DISCUSSION

A. Instructional interventions for cultivating critical thinking

This study reports various pedagogical strategies used by academics to allow students an opportunity for developing their critical inquiry. Some widely adopted pedagogical strategies are field trips, demos, debates in class, group discussions, teacher student interaction/online forums, guest lecturers/experts, problem solving tasks, stimulus response videos and critical reading tasks accompanied by critical reading questions. These macro and micro tasks allow students to engage in critical inquiry and challenge their own thinking. One of the key elements in these tasks is the level of student interaction that promotes critical thinking. Academics in this study believed that students’ exposure to a range of perspectives about one particular topic is useful. These views promote higher inquiry for learning. Thus, in lectures academics do not provide static answers to questions or theories. They often allow students to critique based on the provided evidence and to form their own theories. Thus, student generated
theories are useful in their own learning rather than rote learning.

Rote or regurgitation is one of the main obstacles in developing critical thinking. When students are provided experts’ theories, they tend to recall as they are and believe them uncritically. However, when they are provided with different versions and perspectives, they tend to develop their understanding. Thus, another important aspect in learning is reflective learning. The academics in this study reported the importance of reflective activities where students get the opportunity to reflect on their own learning and to make connections. Reflective tasks allow students to examine how disciplinary specific concepts or theories are applied in broader physical and social environment.

Another strategy that promotes higher order thinking is the teacher interaction as in poking and probing. Teachers must stimulate discussion to allow students to see the three-dimensional view of a particular concept or a perspective. McLaughlin & Luka (2000) argue teacher interaction as in questions provides more opportunity for students think about the relationship between the academic concepts. Therefore, group discussion led by teachers seems to provide more opportunity for lifelong learning and connection.

B. Assessment strategies for developing CT skills

Academics in this study highly regarded effective assessment tasks as contributors to develop critical thinking skills. They adopt a range of micro and macro formative assessment tasks to allow students opportunities to develop subject specific knowledge, knowledge application dynamics and critical thinking. Some widely used tasks are group challenges, problem solving, argumentative and expository essay questions, case study analyses, reflective journal writing, peer reviews, presentations, and critical reviews, reading tasks, role plays/simulations, e-portfolios and synoptic essays (reflecting on what you learn). These tasks are used alternatively both as macro and micro tasks depending on the need and academics’ professional judgment. Some of these tasks are used as group or individual assessment.

It was noted that the most assessment tasks were organised in a similar pattern. The tasks mentioned above provided a stimulus for engaging students and they were then provided time for critical research and to write their response. Once the response is received by the staff, they evaluate students’ work and provide feedback and appropriate grades. The study found two common different designs in the organisation of the assignments: linear design and the circular design (see figure 1 and 2 below).

Figure 1: Linear design

Figure 2: Circular design

While linear design is more suitable for summative tasks, the circular design is more suitable for formative tasks. When the tasks are organised in the circular order, students get more opportunity to reflect on teacher feedback and demonstrate critical thinking skills. Effective teacher feedback is critical in cultivating critical thinking skills and it allows both students and teachers’ an opportunity for reflection. However, linear design is less effective as students would only concentrate on the mark given not on the feedback on their responses and it does not provide opportunity to rethink and think on the directions given by experts. This highlights that the mark is less important and the feedback is more important. As Sadler (2010) argues teachers need to develop a systematic feedback procedure and develop an appraisal system to help students to act on feedback.
C. Challenges and tensions
While the academics in this study consider developing students’ ability for critical thinking is one of their major role, “They (critical thinkers) blossom in any field” (P. 10.), “as they are holistic thinkers” (P.10), they face several challenges in their practice. One participant pointed out that there is possibility for an academic to disregard this skill but teach only the subject content:
That’s why it’s really important to teach it (critical thinking) when you do have the opportunity because you don’t want a student going through their entire Engineering degree and not being able to think critically, but it’s theoretically possible to do that. (P 1)

Therefore, it is important to pay explicit attention to critical thinking skill and carefully organise activities to engage students. The challenges were categorised as shown in figure 3 and 4 below:

![Figure 3: Teacher-related challenges](image)

![Figure 4: student-related challenges](image)

The most common challenges (both teacher and student related) that the majority face are giving students sufficient and effective individual feedback, students’ limited experience in directing higher order thinking and their skills of in-depth reading and effective writing in academia. The discussion in the previous section has also noted the need for holistic circular feedback to develop critical thinking. This is a challenge that many academics face in any context as a result of their heavy workloads. This study suggests that there is indeed a crucial need for developing effective measures to provide feedback to our learners to ensure that they understand and can act on feedback.

Students’ limited experience in using higher order thinking is another major challenge that needs addressing. In the process of academic enculturation, perhaps students need to be scaffolded more, until eventually they develop independent skills. This study saw the divided views about scaffolding: some academics thought scaffolding is not necessary for every student. Therefore, they seem to provide guidance, if necessary and required. Too much scaffolding can obstruct independent thinking and creativity in students’ learning. This is highly a professional judgment and can depend on the intellectual level of learners.

As generally agreed, students need to have advanced skills in reading and writing to be able to understand academic arguments and complex theories to translate them into their own words and communicate effectively in learning. The students who do not have enough language skills tend to plagiarise (Devlin and Gray, 2007) and will not engage in deep learning. This illustrates the higher levels of challenges that non native speaker students who learn in English medium face in their learning. If students are not prepared academics encounter difficulties in scaffolding students learning. As Vygotsky points out academics should only provide effective scaffolding within the proximal development zone (Wass et al., 2011). Otherwise, students face difficulties in comprehension.

D. Implications and recommendations
The study has revealed that choosing the appropriate pedagogical intervention and assessment are necessary for effective practice in developing critical thinking. Research and practice in higher education acknowledge that traditional knowledge based acquisition strategies do not contribute to cultivating adequate levels of critical thinking skills (Sternberg, 1986). Barnett (1997) claims that even though academics are in favour of
critical thinking, they have “no proper account of it” (p. 2). While some explicitly teach critical thinking, others expect students to nurture thinking implicitly while taking opportunities provided in their courses (Tapper, 2004). This study shows that academics adopt numerous explicit strategies and the reflective activities are the most useful ones to help students make connections with their learning.

The current study highlighted that teachers do have theories about their teaching and these theories are generated with their experience in student learning. This confirms Fox (1983) argument of the contribution of teacher-initiated versus student-initiated teaching theories. Fox’s classification indicates that teachers do seem to develop their pedagogy by working with students and reflecting on the perceptions they develop over time about student learning. However, education policy and graduate attributes help them to initiate their pedagogy.

VII. CONCLUSION

This paper has reported on the findings of a qualitative study that inquired assessment and pedagogical strategies used in cultivating critical thinking skills in an Australian university. It has analysed the strategies used in teaching and assessment and it identifies several useful strategies to develop critical thinking. The study shows the importance of reflective exercises that allow students to expand thinking by evaluating the use of academic concepts in disciplines. It has also discussed the importance of effective teacher feedback to stimulate students’ critical thinking skills.

The study indicates several teacher-related and student-related challenges in academic practice. Some academics seem to negotiate these challenges but they require more systematic and consistent support to negotiate such challenges. These findings suggest that universities need to move forward developing effective strategies for pedagogy and assessment, particularly introducing strategies for effective feedback. If a university course is only comprised with knowledge based testing, there is little possibility for course takers to develop critical thinking. As critical thinking is the long lasting legacy of higher education, course convenors must pay full attention to develop critical thinking in their courses and allow students to engage in thinking based tasks to offer opportunity for learning transfer to occur across disciplines. Local Universities must address the English language deficit to help students to engage in deep learning, if they choose to use English as the academic lingua franca.

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**BIOGRAPHY OF THE AUTHOR**

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Tertiary English Education: Are we Producing Lifelong Learners?

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Abstract—Given the importance of the English language as a pre-eminent international language today, the competency in the English language, maintaining continuous passion to learn English, and acquiring the skills associated with lifelong learning of English have now become essential. Thus, most Sri Lankan universities have also acknowledged the need to offer an English course for all the undergraduates and it is vital that the undergraduates should develop into lifelong learners of English who retain a passion for learning English even after the completion of formal examinations. Thus, this paper attempts to explore whether the undergraduates in Faculty of Social Sciences and Languages (FSSL) of Sabaragamuwa University of Sri Lanka (SUSL) have the inclination to become lifelong learners (LLL) of English after completing their Core English Language (CEL) course and whether there is any association between their gender and their tendency to become lifelong learners of English.

Using the simple random sampling 130 students of SUSL were selected for this study. In addition to semi structured interviews and class room observations, data were collected mainly by questionnaires designed on a five-point Likert-scale adopting items from Macaskill & Taylor’s questionnaires (2010). Mean Comparison, Crosstabs and Pearson Chi-square were computed for the purposes of analysis.

The study revealed that over 80% second-year undergraduates of FSSL in SUSL had the propensity for lifelong learning of English whereas 19% undergraduates were not lifelong learners. Moreover, no significant association could be seen between their gender and the tendency to become lifelong learners. Hence, as they have the most required propensity to become lifelong learners of English irrespective of their gender, the lecturers, and the administrators should take every possible step to make them enjoy learning English, get the maximum benefit out of the CEL course, and help them to sustain and develop the skills associated with lifelong learning.

Keywords—Lifelong learners, Gender, Tertiary English Education

I. INTRODUCTION

The concept of lifelong education was originated in the seminal UNESCO Report Learning to Be (1972) written by Edgar Faure et al. This report underpinned that lifelong education is based on four principles: vertical integration, horizontal integration, democratization of knowledge and learning society. Faure’s report paved the way for the emergence of lifelong education which gave prominence to the learner in the processes of teaching/learning, as opposed to the conventional views of the time. After two decades, lifelong education was replaced by lifelong learning in the UNESCO’s report Learning: The Treasure Within (1996) which pointed out the need to rethink and update the concept of lifelong education in order to reconcile three forces: competition, which provides incentives; co-operation which gives strength; and solidarity, which unites. This paradigm shift was indeed a significant milestone as it made a drastic change pertaining to the spectrum of lifelong learning. The contemporary definitions of lifelong learning reiterate the enhancement of the lifelong learners’ characteristics. Accordingly, learners with self-directed learning, autonomous learning, motivation to learn, and perceived competence are considered lifelong learners. (Kirby et al., 2010; Macaskill & Taylor, 2010). Weedt and Kendall (2004) also pointed out several characteristics of lifelong learning such as self-motivation, forms of progression and personal achievements, learner-centred and maintenance of portfolio of personal achievements.

Given the importance of English as the most widely spread international language, the importance of having competency in it and maintaining continuous passion to learn it, and acquiring the skills
associated with lifelong learning of English have now become inevitable. Today the significance of learning English is highly emphasized and Sri Lankan government proposes and implements new programs to improve the English language skills of the students almost every year. As a result, Sri Lankan school students learn English as a compulsory subject from grade three and in 1999 it was made a compulsory subject for the Advanced Level students. Also, in 2002, the government restarted English medium education in public schools under the Amity Schools Project. In addition most of the higher education institutes and universities have introduced English as a subject and some of them conduct their study programs in English medium. The University Grants Commission (UGC) advocated and made it compulsory that the undergraduates pass the English language paper for the completion of the degree. In universities, many steps were taken to improve the English language competency of the graduates. English Language Teaching Units (ELTU) were established in almost all the universities to facilitate a three or six months intensive English course which commences right at the beginning of the students’ university career.

Most Sri Lankan graduates, however, are constantly criticized for their deficiency in English despite having learnt it for many years. In this scenario, the undergraduates should focus on their English language competencies to counteract this recurrent claim in order to gain academic, professional and personal success. Accordingly, the undergraduates should develop into lifelong learners of English who retain a passion for learning even after the completion of formal examinations.

However, there has not been adequate research conducted regarding the facets of lifelong learning in Sri Lankan universities. This paper attempts to explore whether the undergraduates of Sabaragamuwa University of Sri Lanka (SUSL) have the inclination to become lifelong learners of English after following their Core English Language course (CEL) course. It also attempts to investigate whether there is any association between the students’ gender and their tendency to become lifelong learners of English.

II. METHODOLOGY

The Faculty of Social Sciences and Languages (FSSL) of Sabaragamuwa University of Sri Lanka (SUSL), has the first Department of English Language Teaching (DELT) in the Sri Lankan university system and it was founded in 2004 as an umbrella department in order to enhance the English language and communicative competence of the undergraduates. The English Language is taught in the first two years as a compulsory credit course and the requirement in this area must be satisfied if the students are to obtain the degree. Using the simple random sampling 130 second year students of Sabaragamuwa University of Sri Lanka were selected for this study. 92 of these participants were female students while 33 students were male while 5 of the students have not mentioned their gender. All of the participants had been studying Core English Language for the last 4 semesters: first year, first semester; first year, second semester; second year, first semester and second year, second semester.

The survey used for the purpose of collecting data was a partial replication of the survey developed by Macaskill & Taylor (2010). It was a partial replication in which the Autonomous Learner Scale (ALS) of Macaskill & Taylor were unchanged, except very few additions to make the statements more comprehensible for the students. The survey includes 12 items designed on a five-point Likert-scale. The first seven questions were formed to identify the students’ independence of learning while the remaining five questions in the survey examined the students’ study habits.

Informal interviews were conducted both with the second year students and the staff of the Department of English Language Teaching to get an idea about their tendency to become lifelong learners of English. As the two researchers are lecturers in the Department of English Language Teaching, observing students has become easier and reliable method for collecting data.

III. RESULTS AND DISCUSSION

In order to analyze the data SPSS and MINITAB were used. In order to analyze FSSL second-year undergraduates’ propensity towards learning English, mean comparison was computed using one-sample T distribution. Here, the survey is made using a five-point Likert-scale and assigned values from 1 to 5 to each alternative (from Strongly Disagree to Strongly Agree) respectively. Hence, the test mean was taken as 3.
$H_0$: $\mu \leq 3$  Students are not lifelong learners  

$H_1$: $\mu > 3$  Students are lifelong learners  

($\mu = \mu_0$)

Here, the $H_1$ was taken as mean greater than 3. Thus, those who ticked only 4 (Agree) or 5 (Strongly Agree) for all the 12 statements were taken as lifelong learners. Those who ticked 3 (Neutral) were not taken as lifelong learners.

Table 1: The undergraduates’ grades for CEL211 and their tendency to become lifelong learners of English

<table>
<thead>
<tr>
<th>CEL 211</th>
<th>*Final</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B-</th>
<th>C+</th>
<th>C-</th>
<th>D</th>
<th>E</th>
<th>Total</th>
</tr>
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<tr>
<td>SD (%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6.2</td>
<td>0</td>
<td>0</td>
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<tr>
<td>D (%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3.6</td>
<td>0</td>
<td>6.2</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>N (%)</td>
<td>0</td>
<td>20</td>
<td>12.5</td>
<td>7.1</td>
<td>11.1</td>
<td>14.3</td>
<td>66.7</td>
<td>12.5</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>A (%)</td>
<td>100</td>
<td>80</td>
<td>75</td>
<td>92.9</td>
<td>77.8</td>
<td>75</td>
<td>33.3</td>
<td>68.8</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>SA (%)</td>
<td>0</td>
<td>0</td>
<td>12.5</td>
<td>0</td>
<td>11.1</td>
<td>7.1</td>
<td>0</td>
<td>6.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*Final - each respondent’s mean of all the 12 answers.

The mean calculated by MINITAB from the sample was 3.76190. Since the mean is higher than 3, it rejects $H_0$ ($\mu \leq 3$ Students are not lifelong learners) which clearly indicates that all the undergraduates are lifelong learners of English.

Moreover, crosstabs were calculated and the results were categorized according to the grades the students obtained for the last examination they faced.

According to table 1, only 19.4% undergraduates were not lifelong learners whereas 80.4% were lifelong learners. Thus, it is evident that most of the undergraduates of FSSL are lifelong learners of English.

<table>
<thead>
<tr>
<th>Count</th>
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<tr>
<td></td>
<td>Male</td>
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<tr>
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<td>1</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>N</td>
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<tr>
<td>A</td>
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</tr>
<tr>
<td>SA</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>78</td>
</tr>
</tbody>
</table>

According to table 2, 22% of male undergraduates and 15% female undergraduates were not lifelong learners whereas 78% of male undergraduates and 85% female undergraduates were lifelong learners. Thus, it is proven again that most of the undergraduates of FSSL are lifelong learners of English.

Figure 1. The Undergraduates’ Propensity to Become Lifelong Learners of English (measured according to grades)
Moreover, it is clear that no association can be found between the gender of the undergraduates and their inclination to become lifelong learners of English. This is further proved by the Chi-Square Test (Refer table 3) in which the probability is higher (.788) than the conventional 5% (P>0.05) indicating statistically insignificant correlation coefficient.

IV. CONCLUSION

The study revealed that over 80% second-year undergraduates of FSSL in SUSL had the propensity for lifelong learning of English whereas 19% undergraduates were not lifelong learners. Moreover, in terms of gender, 78% male undergraduates and 85% female undergraduates were lifelong learners. In addition, no significant association could be seen between their gender and tendency to become lifelong learners. Hence, as they have the most required propensity to become lifelong learners of English, the lecturers, and the administrators should take every possible step to make them enjoy learning English, get the maximum benefit out of the CEL course, and make them successful lifelong learners of English. Therefore, the findings of this study will enlighten the lecturers of the fact that SUSL undergraduates have the necessary inclination towards lifelong learning of English; however, as lecturers, we need to help the undergraduates to sustain and develop skills associated with lifelong learning.

The findings of this study may provide insights into the assumption of the lecturers at the University of Sabaragamuwa that SUSL students are unsuccessful in learning English and there is a high level of absenteeism because they lack continuous passion to learn English, which turned out to have no scientific value since the findings of the present research revealed that only 19 percent of the participants did not have the inclination towards lifelong learning of English. The findings of the study also revealed that there was no significant correlation between students’ gender and their propensity to become lifelong learners which again go against the opinion of the majority of academic staff that female students are more enthusiastic and in a continuous pursuit of knowledge than the male students. Thus, if the students get absent very often and perform poorly in the examinations whilst the majority of students do have the propensity to become lifelong learners, then the university authorities should be self-analytical about the teaching/learning environment of the university, especially with regard to English. Hence, a considerable attention should be paid for the content of the CEL course, lecturers, teaching methods, the materials used. This could suggest that there is a requirement for a needs analysis which helps to identify students’ needs so that the necessary steps could be taken to remedy the situation including developing materials that can better meet the students’ needs and can increase students’ attendance in the lectures and success rates in English lessons.

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**BIOGRAPHY OF AUTHORS**

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The Effectiveness of the Implementation of the National Plan for a Trilingual Sri Lanka: In Relation to the Role of English in School Level

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Abstract—The 10 Year National Plan for a Trilingual Sri Lanka (2012-2022) could be identified as a high potential development project introduced recently which upon being successfully implemented and executed could result in many benefits to the country as well as society. However, given the fairly recent implementation, the expected outcome and the overall effect of the plan remain completely hypothetical. Therefore, given the lack of analysis or rather any detailed account on the Effectiveness of the Trilingual Plan, it is the aim of this study to account for the effectiveness of the Trilingual Plan at its current phase in relation to the English language teaching and learning in school level.

The study follows different methods of data analysis and is largely quantitative in nature. Therefore, the study is based on a field setting of various government institutions, departments, and schools which deal with the execution of the Trilingual Plan. (E.g. - Ministry of National Languages and Social Integration, Ministry of Education) The primary sources of data collection are interviews and questionnaires gathered mainly through the above mentioned institutions. The secondary sources of data collection are the various reports, articles, books on the 10 Year National Plan for a Trilingual Sri Lanka.

The study analyses the many strategies adopted by the Plan to promote English Language in schools and how they are implemented in a practical scenario. And in analysing these strategies the study looks into the challenges faced and drawbacks shown during the execution which hinders the implementation and tries to seek the methods which can be incorporated in order to increase the effectiveness of the Trilingual Plan.

Keywords - Ten Year National Plan for a Trilingual Sri Lanka, English as a ‘life skill’, English language teaching in schools

I. INTRODUCTION

With the year 2012 being declared as the Year of Trilingual Sri Lanka, the Mahinda Chinthana Programme initiated the Ten Year National Plan for a Trilingual Sri Lanka in the said year. It sets the foundation to all the citizens in the country to acquire trilingual skills and competencies in the languages of Sinhala, Tamil and English.

Preamble of the Trilingual Plan states that it aims to create social integration through the spread of languages, while the different groups of people continue to maintain and foster the heritage and ethos of their forefathers. The Trilingual initiative intends to encourage all Sinhala speaking people to learn the Tamil language and all the Tamil speaking people to learn the Sinhala language. At the same time the initiative intends to promote English as a Life Skill to access knowledge developed outside the country and increase employment opportunities among people of all ages, gender and social categories in the country, with the long term objective of steering Sri Lanka towards economic development.

A. English as a Life Skill

As mentioned above English is promoted as a ‘Life Skill’ under the Trilingual Plan. The concept of English as a Life Skill intends to promote English for its utility value rather than for its social value. This concept was initiated in 2009 with the President Mahinda Rajapaksa coming into power. He declared 2009 as the Year of English and IT and introduced the concept of “English as a Life Skill” by initiating the Eighteen month Road Map to promote Spoken/Communicative English in Sri Lanka. This Road Map programme intended to give a new perspective to English language in Sri Lanka. It aimed to promote English as a skill for employment and a vehicle reaching out to the external world of knowledge and learning. (Kahandawaarachchi 2009)
In order to better understand this concept it is vital to consider the Role of English in Sri Lanka prior to the introduction of ‘English as a Life Skill’. In the post colonized Sri Lanka, English language was used as means of exhibiting the social hierarchy. In other words, English became the symbol of the Elitism, High class and Privilege. However amidst the Mass class it also became a symbol of Social Oppression. English was respected without any doubt while at the same time it was feared with vehemence. Fear stemmed from the dislike to make errors in English because unlike in Sinhala and Tamil usage, English was always coupled with the notion that it was a language to be used in the correct manner or there was a high chance of the user being ridiculed for a mistake made in using a language foreign to him. The said approach towards English was one of the main reason for it to be a means of social oppression and thus, attacked by the Mass class in various forms, be it the referring to English as ‘Kaduwa’ or ‘Kadda’(Sinhala word for sword) or the outrage shown during the Youth unrest in 1980’s.

Thus, under such circumstances any efforts made in promoting the usage of English Language failed to achieve its aim. Promotion of English for its correct Rule Learning forced the learners to learn the rules of English but when it came to using the language they hesitated. They were so conscious of the rules, pronunciation, syntax, etc of the language that these inhibitions prevented the usage of the language. The continuation of this process for many decades made Sri Lanka a country where millions were spent on learning English language to finally fail at achieving its potential.

And therefore at a time like this a new concept was introduced as ‘English in our way’, which intended to highlight on the Sri Lankan English. Sri Lankan English is one variety of English among many such as British English, American English, Indian English, etc. At the early Colonial era British English was ‘the English Language’ because for many of the colonies English was introduced by the British. But as time passed many other varieties of English emerged which are called ‘New English’, such as Indian English, Australian English, South Asian English, etc. And likewise there is Sri Lankan English (SLE), as another variety of English.

So, the concept of ‘English in our way’ deals with the said variety of Sri Lankan English. Although Sri Lankan English had already existed prior to this concept given the inevitable natural adaption process of the foreign language to the Sri Lankan culture, the accumulated attributes such as words, dictions, pronunciation were not given due attention or acceptance.

However when it comes to the promotion of English as a Life Skill, the concept aims to make the Sri Lankans accept the ‘Sri Lankaness’ of the English in Sri Lanka. The acceptance of English language as a part of the Sri Lankan identity would prevent the negation of English by the majority of Sri Lanka because the attitude towards the language would change and thereby people would begin to see English as a skill rather a liability.

Being implemented only in 2012 the Ten Year National Plan could be called relatively new. However despite being new, the National Plan has high potential and upon successful implementation would benefit Sri Lanka in the national arena as well as in the international arena. Therefore, this study which is based on the effectiveness of English language teaching and learning in schools under the National plan could be a good measure at predicting the outcome of the plan at the end. Also this would be a guide to decide on the drawbacks of the programme upon its implementation and thereby they could be dealt with to achieve the necessary outcome.

By the current year of 2014 the National Plan is in its Phase I which continues till 2016.

II. FINDINGS AND ANALYSIS

At the initial stages of promoting English as a Life Skill, it was identified that one of the main drawbacks of the policies that were implemented till date (prior to the Road Map Programme in 2009) was their inability to make the students use English to converse. As Dr. Sunimal Fernando expresses many times the programme identified this inability and decided to deal with it accordingly. And as a result the programme opted for a fresh approach, namely a new point of view to look at the teaching methods of English. Programmes were designed especially to uplift the oral skills of the English language user. While grammar, reading and writing too would be improved under the new policies it was the oral skills that were highlighted upon. This was due to the common vision of the policymakers, in which they recognized the importance of English language in the International arena as a link language.
Table 1 – The Programmes implemented under the Trilingual Plan

<table>
<thead>
<tr>
<th>Goals of Stage I</th>
<th>Steps Introduced to implement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training of Trainers</td>
<td>-Master Trainers programme.</td>
</tr>
<tr>
<td>Teacher recruitment &amp; Training</td>
<td>-The ten day training provided by the Master Trainers.</td>
</tr>
</tbody>
</table>
-Introduction of a separate Teacher Guide. |
-Distribution of Toolbox of Activities 2013. 
-Distribution of Activity book with Listening CDs for Grade 6-9 students 
-The English Speaking School (TESS) programme. 
-Rupavahini Telecast activities. 
-Dinamina and Thinakaran lessons. 
-Establishing English Activity rooms. |
| Examination Reforms | -Introducing Listening and Reading in GCE O/L. |
| Participatory Monitoring & Evaluation | -Monitoring process conducted by Master Trainers. 
-Monitoring process conducted by ISA officers. |

When analysing the policies implemented via the Trilingual Plan it should be noted that most of the policies presented are a continuation or an upgrade of the policies, presented through the Road Map Programme in 2009, which first marked the promotion of English as a Life Skill. Therefore, the data gathered presents information about the implementation process from 2009.

As shown in Table 1 below when analysing the implemented policies, first the focus shall be drawn towards the various programmes that had been introduced to implement the proposed steps of the Stage I of the National Plan. The Presidential Task Force on English and IT under the coordination of Dr. Sunimal Fernando, Ministry of Education, Directors of Education, Regional English Support Centres (RESC), In-Service-Advisors (ISA) and Master Trainers and teachers play vital roles in implementing the following steps in Island wide schools.

However, initially the goals aimed were rather difficult to be achieved given the lack of necessary resources, especially Human resources. Therefore, the first step of the project was to accomplish capable resource persons. And as a result, steps were taken to ‘Train the Trainers’. In other words, the trainers who are now called as Master Trainers were hired in order to strengthen the capabilities of the English teachers all over the Island.

A. Training of Trainers

Master Trainers who were selected among the teachers, RESC officers, NCOE officers covering the Island on an application basis, were sent to the English and Foreign Languages University (EFLU), Hyderabad for a special training at the initial stages of the programme.

Till date three batches have been thus trained as Master Trainers and according to the Ministry of Education statistics currently, there are 122 Master Trainers spread all around the Island. And they act as Trainers for other English Teachers in the Island as upon their arrival they were appointed to initiate the Ten day Teacher Training which was a step proposed under the ‘Teacher training and recruitment’. And according to the Ministry of Education statistics, it is clearly evident that the execution of this step (Ten Day Teacher Training) had been successfully implemented. And this is further analysed in the following sections.

When discussing how the training of the trainers affected the upliftment of English language in the country, it should be carefully noted that this had been the first time ever that such reputed foreign training was provided to Sri Lankan trainers. And as India too had been a country where similar policies had been implemented in order to promote oral skills of English language users in the past, the experience and the knowledge gained through the training helped to lay the foundation to the policies that followed.

However, as mentioned the purpose of the Master Trainers were to train the teachers in teaching English as a life skill. And by today majority of the teachers are trained as planned. And with that the duties allocated to Master Trainers have also differed. Today, apart from occasional training
workshops they visit each school in their zone and monitor the process of the Life Skills programme. The questionnaires revealed that Master Trainers indeed plays a huge role in implementing the programmes but Ministry of Education data shows that there are instances where their service could be improved.

For instance according to the data gathered from the Ministry of Education, the Master Trainers’ participation in monitoring process shows that a certain amount is not participating. According to the findings this is due to various factors. For example, it could be due to personal reasons such as illness, study leave, etc., and in some instances it could be due to prior commitment to other duties such as being a RESC. And these neglections ultimately affect the whole concept as Monitoring is rather essential to solve the drawbacks and glitches in the programme.

B. Teacher Training and Recruitment

And proceeding on, when analysing the effectiveness of the ‘Teacher Training and Recruitment’, Ministry of Education statistics show that majority of the teachers had participated in the Ten Day Teacher Training from the year 2009-2012.

Table 2 – Number of Ten Day Trainings held all around the Island

<table>
<thead>
<tr>
<th>Province</th>
<th>No. of Teachers</th>
<th>Total Progress 2009-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Trainings held</td>
</tr>
<tr>
<td>Western</td>
<td>4980</td>
<td>129</td>
</tr>
<tr>
<td>Central</td>
<td>3180</td>
<td>100</td>
</tr>
<tr>
<td>Southern</td>
<td>3278</td>
<td>90</td>
</tr>
<tr>
<td>North Western</td>
<td>2856</td>
<td>84</td>
</tr>
<tr>
<td>Uva</td>
<td>1532</td>
<td>57</td>
</tr>
<tr>
<td>North Central</td>
<td>1159</td>
<td>40</td>
</tr>
<tr>
<td>Sabaragamuwa</td>
<td>1921</td>
<td>64</td>
</tr>
<tr>
<td>Northern</td>
<td>810</td>
<td>32</td>
</tr>
<tr>
<td>Eastern</td>
<td>1519</td>
<td>40</td>
</tr>
<tr>
<td>TOTAL</td>
<td>21235</td>
<td>636</td>
</tr>
</tbody>
</table>

Source: Ministry of Education statistics, 2014

Thus, according to the above table, it is evident that the execution of the Ten Day Teacher Training had been a success. This is further proven from the information gathered through the questionnaire as 100% of the sample had participated in the Ten Day Teacher Training during the years 2009-2012.

And according to the Ministry of Education statistics a special training sessions are provided to National College of Education (NCOE) trainee teachers. Thus these trainings ensure the training is continuously provided to all the teachers around the island.

Table 3 – Number of Teacher Trainings held in NCOEs in 2013

<table>
<thead>
<tr>
<th>NCOE</th>
<th>Number of Trainings held</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaffna</td>
<td>2</td>
</tr>
<tr>
<td>Uva</td>
<td>1</td>
</tr>
<tr>
<td>Pasdunrata</td>
<td>3</td>
</tr>
<tr>
<td>Nilwala</td>
<td>5</td>
</tr>
<tr>
<td>Peradeniya</td>
<td>4</td>
</tr>
<tr>
<td>Siyane</td>
<td>5</td>
</tr>
<tr>
<td>Mahaweli</td>
<td>5</td>
</tr>
<tr>
<td>Ruwanpura</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Ministry of Education statistics, 2014

All in all, the training of the Master Trainers followed by the Ten Day Teacher Training programme managed to lay the foundation to the implementation of the National Plan as these steps resolved the problem of lack of human resources to a greater extent. And the Training Programme contributed vastly to the upliftment of English language as it trained the teachers to improve the oral skills of the student.

However, it is observed that the steps taken do not entirely solve the problems because according to the findings made it is evident that when it comes to the proper distribution of these resources there are many factors which had prevented that. For example, the study conducted revealed that even today; there are schools without any English teachers. And it was rather applauding to know that this applied to urban schools such as Colombo schools as well.

The study conducted revealed that there are various issues which caused hindrances in proper distribution of teachers. For example, there are many reputed schools in the Island which have more than the required number of English teachers (per school). While on the other hand there are schools which do not even have one teacher.
According to the observations made, political influence, reputation of the school, benefits available can be identified as the deciding factors of the issue of distribution of teachers. And this has a negative impact upon the effectiveness of the plan because even though there is a high success rate in Ten Day Teacher Training programmes the skills gained through are not properly utilized. Thus, the potential of the programme is impacted.

However despite the said drawbacks the programme finally achieved the Human resources they intended and then moved on to ‘Restructure the language course’.

C. Restructure the language course
A separate period for Life Skills was introduced to the school system of Grade 6-13 under the Trilingual Plan. According to the questionnaires distributed among the Western Province school teachers and with the observations made by the interviews conducted for the ISAs it was found that the period though allocated in the school timetables has few issues in execution.

Although a separate period is allocated it is not included or tested in the exams. And also given the various other implementations introduced after Life skills programme such as the School Based Assessments (SBA) focused upon the Results upliftment in schools, teachers find it hard to contribute their time and energy upon the Life Skills period. Therefore, the proper attention that should have been given to the Life Skills programmes is not given thus, affecting the quality of the programme. And although these programmes relate to improving English language, it is not necessarily part of Life Skill Programme. Rather they are part of the school syllabi. In such a situation it can be seen that there are conflicts between adhering to the goals in the Life Skills programme and the goals in the school syllabi. And given the exam-oriented school system in Sri Lanka most of the time more weight is given to the syllabi thus, affecting the implementation of the National plan.

Apart from this complication, the questionnaires also revealed that the teachers faced difficulties in managing the classroom at certain times given the limited space available in the classroom and the loud noise of the students. A few teachers explained how certain students still lack the necessary courage to use English oral abilities in the class. Apart from these reasons lack of proper resources too seem to be an issue. The questionnaires revealed that still there are schools which have not got all the resources granted for the Life Skills programme. Thus, activities which require usage of the mentioned resources are hindered.

Another step introduced under the restructuring of the language course is to introduce a separate new teacher guide for Life Skills, promoting vocal English. This teacher guide assisted the teacher to monitor the progress of the students while recommending the activities to be followed in the class. The questionnaires provided revealed that 100% of the sample had obtained the Teacher Guide thus, indicating that implementation of the restructuring of language course is successful in that aspect.

D. New textbooks, activities and materials
Now the discussion will shift towards the logistical aspects of the project. Having restructured the language courses the next aim of the programme was to provide the necessary logistics to acquire the full potential of the plan. Accordingly, the new textbooks, activities and materials introduced were to achieve this purpose. As mentioned in Table 1 under this category several new steps were introduced which were designed to enhance the oral English skills of the students.

All the materials are planned in such a manner that the student even in the absence of guidance of a teacher would be able to learn and practice English oral skills. Especially, distribution of Toolbox of activities which was introduced in 2013 and the distribution of Activity book with Listening CDs for Grade 6-9 students are rather commendable approaches because they are designed specially to cater to students in the absentee of the teacher. As mentioned above, given the lack of teachers in some schools these steps could have been rather useful. But the lack of student enthusiasm, lack of proper English language foundation, etc these steps fail to fulfil the intended objectives.

Another step taken to achieve the goals of this programme is the establishment of English Activity
According to Ministry of Education, the English Activity Rooms will contain Rs.300,000 worth equipment such as Computers, Multimedia facilities and DVD players. This step would ultimately assist in resolving the issue of lack of visual aids in teaching. Because as observed through the questionnaires lack of visual aids had an impact in classroom activities. Ministry of Education expects to establish one Activity Room per one division and accordingly has managed to establish 308 in 2011 and another 27 by the year 2013.

TESS (The English Speaking School) programme, which marks a new English Teaching and testing initiative for Sri Lankan school system, was officially launched in March, 2014 and it is one of the newest steps taken to implement the National Plan. The programme was piloted in the Prince and Princess of Wales Colleges, Moratuwa and the Mahinda Rajapaksha College, Pitipana, Homagama. This initiative thus laid the foundation to establish language labs in Sri Lankan schools.

Also, according to Ministry of Education other than TESS, 9 other Language labs will be established throughout the Island covering each province. This project is funded by the Indian government and the Western Province language lab along with Ruwanpura, Jaffna, Niliwala, Bingiriya Teacher Training College language labs have already been established. Adalachchanai and Pulathisipura Language labs are currently under construction. Here the aim is to achieve Language proficiency via using technology but given the short time period since its establishment the success of the implementation cannot be measured without further findings.

E. Examination Reforms
Examination reforms are another step proposed by the National plan. And accordingly, it expects to include oral and listening tests to the G.C.E. Ordinary Level exam in the near future. These reforms intend to achieve a better utilization of the English language skills in the practical world and thus could be rather beneficial upon implementation in contributing towards the upliftment of English language. Because then due to the competitive environment more focus would be given to improve oral English skills. And at the same time teachers would pay more importance to Life Skills period in schools.

However, despite the lucrative nature of the steps it seems rather impossible to succeed due to various issues. Although implementing this step would mean Sri Lanka to be the only country that is testing oral capabilities of English Language in a national exam, in a practical sense Sri Lanka does not have the necessary resources to conduct such an exam in a yearly basis. The human resources, technology, cost, etc. would all be barriers that would prevent a successful execution. Therefore this reform particularly seems far reaching at the moment.

F. Participatory Monitoring and Evaluation
After the above steps the National plan has suggested a participatory monitoring and evaluation which would be accountable to the implementation related issues. Generally, Master trainers conduct a Participatory Monitoring and Evaluation under the coordination of the Ministry of Education in schools in their Zonal area. The monitoring process closely looks for the students’ progress and accordingly makes the evaluation.

According to the findings mentioned earlier as well it is clear that there are certain drawbacks in the Monitoring process conducted by the Master Trainers. However, it should also be observed that these drawbacks are twofold due to the fact that not only the Master Trainers fail to conduct the Participatory Monitoring and Evaluation, there is also the problem of the teachers who given their high workload, other commitments, etc. often tend to neglect the life skill activities.

However, at the end of the discussion it also ought to be noted that the English Language performance of the students have indeed risen since the first implementation of the Life Skills Programme in 2009. Because the statistics show that the performance of the English Language at the G.C.E. Ordinary Level has shown an upwards trend in the recent years. The pass percentage of English Language was 30.6% in 2008 and it has risen to 44.57% in 2011.

III. CONCLUSION
This study was conducted in order to understand the effectiveness of the implementation of the Trilingual Plan in light of English language teaching and learning, especially in school level. The study was based upon the hypothesis that given the potential of the Ten Year National Plan for a Trilingual Sri Lanka (in relation to English language
teaching and learning at schools), the Plan could bring out a positive outcome in the end and it would be a rather effective promotion of trilingualism in Sri Lanka.

However through the findings made during the study, hypothesis stands to be false to a greater extent. Although initially the plan had immense potential in its policies, the findings show that two years after implementation majority of the programmes introduced seem to be either inefficient or malfunctioned. When analysing these inefficiencies in depth it pointed towards the roles of various resource persons in making the implementation a success. Accordingly, through the data collected it is quite evident that the Presidential Task Force under the supervision of Dr Sunimal Fernando and the Ministry of Education carried out their roles as the main executors of the National plan in quite a commendable manner. The vision they foresaw was to promote English as a life skill focusing on the upliftment of English language for its utility value. And the policies they planned and executed were implemented to fulfil this vision.

The implementation was quite effective at this stage. The executors were focused upon the upliftment process and the Trilingual plan had the government support and blessings. All of these factors combined with the huge budget dedicated for the cause raised the expectation level of the project.

However, the next stages of implementation were rather problematic. The policies introduced by the Presidential Task Force along with the support of the Ministry of Education were then passed onto the Directors of Education in each province and then to Zonal Directors for further implementations. And then ISA, RECS officers and Master Trainers took over from that point onwards and they guided and monitored teachers to finally deliver the lessons to the students. And although majority of the policies were implemented during the whole process, there were more powerful factors which hindered the implementation process. Unequal resource distributions, lack of human resources, social and political factors affecting the smooth running of the process are few examples of such complications.

Thus, in concluding, this study revealed that the Trilingual Policy is failing to achieve the intended outcome at the end of the Stage I of the programme (in relation to school level English language) due to various challenges and drawbacks occurred during the implementation process. And these challenges and drawbacks prevent the Trilingual Plan from gaining its full potential by having a negative impact upon its effectiveness.

A. Recommendations
The suggested recommendations aim to cure the challenges and drawbacks faced during the implementation of the Stage I.

1) Coordination: A better coordination between the resource persons at various stages of implementation could provide better results. The study revealed that in certain instances lack of coordination was an issue. Various methods being implemented into the school system often tend to impact the effectiveness of the methods implemented till then. But if they are properly coordinated the results could be better.

2) Oral exams: As mentioned competitive exams continue to be a part of the Sri Lankan education system and therefore all (ISA, RECS Officers, Master Trainers, teachers, students, etc) are focused upon the results upliftment. However in the long run it is often seen that having this technical knowledge is rather worthless when compared with the utility knowledge. Therefore a balance should be achieved. And thus having oral exams could be a good solution because that would create the necessary buzz that is needed to promote English oral skills.

3) Classroom Structure: The questionnaires provided revealed that majority of the teachers were not satisfied with the classroom environment when conducting the Life Skills period. According to them the issues such as loud noise, limited space, and lack of resources affect the effectiveness of the Trilingual policy. Therefore, few adjustments in the classroom structure could be helpful.

These are few recommendations which can be implemented to increase the effectiveness of the Trilingual Plan.

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REFERENCES

BOOK


WEB PAGE


INTERVIEWS


Nanayakkara, P. (2014). *How the Ministry of Education contributes to the implementation of the Ten Year National Plan for a Trilingual Sri Lanka in relation to the role of English in school education*

GOVERNMENT PUBLICATION


BIOGRAPHY OF AUTHOR

Author is a LLB graduate of University of London, United Kingdom. She is currently involved in her final year studies of BA (Languages) at Sabaragamuwa University of Sri Lanka. She is also sitting for her Attorney-at-Law exams. Her research interests include Education, Modern Languages, Literature and International Relations.
Abstract— Studies on needs analysis in English for Specific Purposes (ESP) have focused their attention on identifying contradictory stakeholder needs. This study is aimed at identifying needs of stakeholders with regard to the preferred content of an English for Legal Purposes Course (ELP) for Sri Lankan law undergraduates. Needs of 104 stakeholders in two university English courses (i.e. law undergraduates, law lecturers, English lecturers, Heads of Departments of Law and a Course Coordinator and lawyers) were collected using questionnaires and semi-structured interviews. Stakeholder needs were identified in terms of necessary language skills required in both learning and target situations. The mean values of the law undergraduates’ responses were calculated, and in order to measure whether there is a significant difference in the mean values of the undergraduates of each academic year One Way ANOVA tests were carried out. Further, data collected from open-ended items of the questionnaire and semi-structured interviews were analysed qualitatively by grouping related responses and identifying patterns of stakeholders’ responses. The results of this stakeholder needs analysis include necessary language skills, preferred activities and non-linguistic needs such as teaching methodology, materials and assessment. This study would provide an empirical basis for curriculum planning for an ELP course and a foundation for tailor-made language course for Sri Lankan law undergraduates.

Keywords—stakeholders, needs analysis, linguistic needs

I. INTRODUCTION

Needs analysis is a central device in curriculum development in English for Specific Purposes (ESP). It consists of the language performance of learners in both productive and receptive skills to set course goals. The views of stakeholders such as students, teachers, heads of departments etc. are considered important in identifying both linguistic and non-linguistic needs of learners. The rapid evolution of needs analyses in the field of ESP has brought new models which analyze a wide range of social issues that affect a language teaching programme. In that regard, characteristics of the environment in which the courses are conducted and views of stakeholders are considered as important factors in current models of needs analysis. Stakeholders at different levels, their power relations and how they influence teaching and learning have been one of the latest interests in needs analysis of ESP.

Though many Sri Lankan universities have made undergraduate degree programmes more vocationally oriented, there is no required expertise to fulfil the needs of English for Specific Purposes (Wickramasingha, 2009). Legal study programmes have been conducted by many higher educational institutions and universities in Sri Lanka since 1980s. However, English for Legal Purposes (ELP) has not been studied extensively by researchers in the Sri Lankan context. In addition, there is a need to develop teaching materials in ELP that fulfil both learning and target needs of Sri Lankan law undergraduates. Further, there are no published studies on identifying stakeholder needs of ELP in Sri Lanka. Therefore, this study aimed at identifying specific English language requirements of law undergraduates, perceived as important by different stakeholders.

II. LITERATURE REVIEW

Recent studies on needs analysis needs i.e. Jass-Aguilar (1999); Long, (2005); Cheng (2011); Belcher &Lukkarila ( 2011); Paltridge & Starfield (2013) have focused their attention on critically-aware quantitative research that encourages awareness of a need for a critically pragmatic ESP which discusses contradictory stakeholder. Huhta, Vogt &Ulkkii (2013) argue that “a needs analysis for ESP should be evidence-based where the evidence is supported by ‘a thick description’ of the professional workplace or training institution or one which attempts to unpack the multiple factors that collectively determine a more accurate understanding of the context”. Benesch’s right analysis (2001) is a radical departure from
conventional needs analysis which claims that each academic institution offers its own opportunities for negotiation and the reconciliation of different stakeholder needs for a better language programme.

Byleen and Altman (2007) consider stakeholder needs analysis as “the collective experience and wisdom” (cited in Rice, 2007). Similarly, Rawley and Romer (2007) consider the importance of collaboration of different perspectives of stakeholders. Johns and Makalela (2012) describe tensions and conflicts that occurred in the needs analysis process carried out in a university of South Africa as there were mismatch between the needs of teachers and learners (cited in Carter-Thomas, 2012). Similarly, Cumaranatunge (1988) collected data from multiple stakeholders with the use of questionnaires, semi-structured interviews, field study, informal interviews and participant observation in order to design a learner-centered course that caters to Sri Lankan domestic aids in West Asia (cited in Jasso-Aguilar 1999). The results include the language used in the job, problems and pressures faced by domestic aids in their job. Amongst few researchers on stakeholder needs analysis for English for Legal Purposes, Ahmad (2009) studied the perception of judges in Pakistan with reference to the linguistic adequacy of fresh law graduates and their deficiencies of Legal English.

A Hypothesis
It is important to identify needs of stakeholders with regard to a preferred content of an ELP course that includes both learning and target needs of law undergraduates.

B Research Problem
What learning and target needs do stakeholders perceive as important when designing English for Legal Purposes course for law undergraduates?

III. METHODOLOGY

This survey research is based on obtaining the needs of stakeholders who have a direct and indirect influence of the selected two English language programmes in two Sri Lankan universities. A major difference of the two English programmes include the fact that the English programme in University A focuses on enhancing learners’ all four skills of English as well as vocabulary and grammar whereas the programme in University B does not include activities to improve speaking and listening skills. Unlike the programme in University A, the programme in University B is one credit course that offers a certificate.

A. Sample Population of Stakeholders:
This study includes a sample of 104 stakeholders who have a direct and indirect influence on the selected English language teaching programmes: 2 Heads of Departments of law, 1 course coordinator at the Department of Languages of University B, 12 law lecturers from both universities, 10 English lecturers and instructors from both universities, 75 law undergraduates (35 from each university), and four lawyers. Purposive sampling technique was used to select stakeholders who were typical, suitable and convenient to select. In order to have the comprehensiveness of the sample, insiders from two leading universities were selected.

B. Research Instruments:
A questionnaire and semi-structured interviews were used to elicit factual, behavioural and attitudinal data of the stakeholders. The questionnaire was used with law undergraduates and it included a range of topics such as necessities, learning and target needs. The questionnaire for law undergraduates was administrated to an assembled group of undergraduates. The response rate of the questionnaire was high as it was group administrated face-to-face. Apart from that, semi-structured interviews were conducted with law lecturers, English instructors, the Heads, Departments of Law, course Coordinators of English language programme in University B, and the lawyers.

C. Methods of Data Analysis
The mean values of the law undergraduates’ responses collected from questionnaires were calculated and analyzed using the following decision criteria.

Table 1: Decision Criteria

<table>
<thead>
<tr>
<th>Mean Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between 1-2.33</td>
<td>Low degree of preference</td>
</tr>
<tr>
<td>Between 2.34- 3.66</td>
<td>Moderate degree of preference</td>
</tr>
<tr>
<td>Between 3.67-5</td>
<td>High degree of preference</td>
</tr>
</tbody>
</table>
In order to measure whether there is a significant difference in the mean values of the undergraduates of each academic year One Way ANOVA tests were carried out. Further, data collected from open-ended items of the questionnaires and semi-structured interviews were analysed quantitatively as well as qualitatively by grouping related responses and identifying patterns of stakeholders’ responses.

D. Reliability Statistics of the Data
Cronbach’s Alpha was computed in terms of the average correlation among the scale items to measure how well the items of the questionnaires measure stakeholder needs. Internal consistency above 0.70 was achieved for all items of the three types of questionnaires and the levels of reliability was sufficient.

IV. RESULTS

i. Law Undergraduates’ Needs
The Likert scale item of the questionnaire for law undergraduates included 14 items on listening, reading, writing, speaking, grammar and vocabulary. Law undergraduates rated each of the items on the degree to which they perceive the items important. Response choices ranged from 1 (totally unimportant) to 5 (very important).

Table 2: Law Undergraduates’ Perception of the Importance of Needs

<table>
<thead>
<tr>
<th>Needs</th>
<th>First Year</th>
<th>Second Year</th>
<th>Third Year</th>
<th>Fourth Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening to court proceedings</td>
<td>2.93</td>
<td>3.3</td>
<td>3.23</td>
<td>3.5</td>
</tr>
<tr>
<td>Listening and note taking</td>
<td>1.79</td>
<td>3.0</td>
<td>2.77</td>
<td>3.0</td>
</tr>
<tr>
<td>Debates</td>
<td>2.70</td>
<td>3.35</td>
<td>2.51</td>
<td>3.17</td>
</tr>
<tr>
<td>Group discussions</td>
<td>2.5</td>
<td>2.85</td>
<td>1.94</td>
<td>2.5</td>
</tr>
<tr>
<td>Dialogues</td>
<td>1.93</td>
<td>2.7</td>
<td>2.34</td>
<td>2.17</td>
</tr>
<tr>
<td>Reading to identify specific information</td>
<td>3.43</td>
<td>3.45</td>
<td>3.0</td>
<td>3.67</td>
</tr>
<tr>
<td>Reading and note taking</td>
<td>3.43</td>
<td>3.65</td>
<td>3.09</td>
<td>3.67</td>
</tr>
<tr>
<td>Summarizing</td>
<td>3.79</td>
<td>4.55</td>
<td>4.06</td>
<td>4.0</td>
</tr>
<tr>
<td>Legal letter writing</td>
<td>3.93</td>
<td>4.05</td>
<td>3.77</td>
<td>4.0</td>
</tr>
<tr>
<td>Report writing</td>
<td>3.79</td>
<td>3.75</td>
<td>3.77</td>
<td>4.0</td>
</tr>
<tr>
<td>Completing a grammar workbook</td>
<td>3.71</td>
<td>3.35</td>
<td>3.06</td>
<td>3.17</td>
</tr>
<tr>
<td>Engaging in grammar practice</td>
<td>3.86</td>
<td>4.05</td>
<td>4.09</td>
<td>4.0</td>
</tr>
</tbody>
</table>

According to Table 2 the first year undergraduates consider listening and note taking and conducting dialogues with a low preference as the mean values are 1.79 and 1.93 respectively. Further, the third year undergraduates consider conducting group discussions less important with a low mean value 1.94. In terms of reading skills, the fourth year undergraduates had a high preference with the mean value 3.67 for both reading and identifying specific information and for reading and note taking. All the groups consider summarizing, legal letter writing, report writing, completing a grammar workbook and using a glossary in the class as very important activities with mean values that fall in the high level of the decision criteria.

In order to measure whether there is a significant difference in the mean values of the undergraduates of each academic year One Way ANOVA tests were conducted. According to the results, there is a statistically significant difference in the mean values of the importance perceived by the undergraduates of each academic year only on the following needs.

- Listening and note taking: $0.006 < 0.05$
- Debates: $0.019 < 0.05$
- Group discussions: $0.017 < 0.05$
- Summarizing: $0.020 < 0.05$
- Learning legal vocabulary: $0.010 < 0.05$

The significance level of the above skills were below 0.05 and it indicates the preference of those activities differ by the academic year of the undergraduates.

The undergraduates’ responses for the open-ended items of the questionnaire revealed that the majority of third year undergraduates in University B prefer listening skills to be taught and assessed at the final exam. According to a third year undergraduate in University B, undergraduates who follow the LLB in Sinhala medium need more exposure to listening activities in the English classroom. They complained that teaching listening skills is neglected by the English instructors as more...
attention is paid on teaching reading and writing. In addition, the majority of law undergraduates in both universities mentioned that there is no adequate audio-visual equipment to practice listening skills. According to some undergraduates in University A, the language laboratory could be effectively used in specific time slots allocated for listening.

Few undergraduates needed exposure to different accents of English used in other countries. “I suggest including more activities to improve listening skills specially to understand the accents used by foreigners” (A second year female undergraduate, University A). “Provide exposure to English outside Sri Lanka” ( A second year male undergraduate, University A). The undergraduates’ responses for the open-ended items of the questionnaire included that the fourth year undergraduates prefer classroom practices and assessments not restricted to reading and writing. They preferred speaking skills to be assessed. “It must not be a reading and writing skill class. It must be a practical class”. Also, the majority of law undergraduates in both universities need a separate time slot for speaking activities. According to the study conducted by Evans and Morrisons (2010), the 28 first year undergraduates of their study lacked confidence in their ability to communicate clearly, fluently and accurately in English. Similar to their study, the findings of this study depicted that few of the first year undergraduates dislike speaking activities due to the nervousness they feel in public speaking.

“I am afraid of going in front of the class and perform” (A first year female undergraduate in University A).

“I am already a graduate. But still English is very stranger for me. I hesitate to speak English among friends. But I like very much speak English. I want to be a very good knowledgeable person and talented person by using English. Please get two hours class in every weekend.”(A third year male undergraduate in University B).

The majority of law undergraduates in University B mentioned that the speaking activities are inadequate. It is identified that all undergraduates did not mention any negative criticism on reading activities in responses to questionnaire. Some undergraduates in University A preferred if they had activities on reading legal cases and writing analyses.

The undergraduates’ responses to questionnaires depicted that some of them wish if they were given model documents of legal genres for writing activities. The majority of the third year undergraduates in University B liked the legal letter writing activities of their programme. Some second year undergraduates of University A requested more grammar practice activities.

“Though we practice grammar exercise from little age, it is not that much familiar to us. Always there will be some sort of grammar errors. So I prefer to have a better way to learn grammar in class” (A second year male undergraduate of University B).

In response to the open-ended questions, the majority of undergraduates in University A mentioned that they lack a sound knowledge of legal vocabulary and it prevented them comprehending legal text fully.

“I need to improve my legal vocabulary to perform well in legal studies. It will help me in future to perform legal documentation well.”

ii. Other Stakeholders’ Views on Needs

According to the Course Coordinator of the English Programme in University B, the teaching materials of the Program were designed many years ago by the senior personnel consulting professors, and the revisions to the curriculum had not been done in the recent years. The course coordinator casually informs the instructors about new activities to be incorporated in to the existing curriculum. It is also mentioned that listening and speaking skills are not taught or evaluated in the Programme as it is based on English for Academic Purposes.

“I would like to incorporate audio visual materials into our programme, and revise the reading materials”.

Further, according to the Course Coordinator of University B, some teachers use a glossary of legal vocabulary though it is not a prescribed book for the course.

According to some law lecturers in University B were critical of the teaching methodology used in the English programme.
“The common complaint that undergraduates make is that English lecturers are old and inactive in teaching, so law undergraduates disliked attending the classes”.

Similarly, some law lecturers in University A wanted English instructors to make teaching effective and interesting. According to the Head, Department of Law in University B, the instructors in the English programme have been unable to attract the law undergraduates to the program as most of the teachers in the programme are old instructors and mostly retired school teachers. According to him, undergraduates expect new audio-visual devices to learn English as used in countries like Japan. New technologies such as language laboratories should be used by the instructors. According to the responses of the lawyers the way lessons are presented to ‘young’ undergraduates is a major weakness of the English language programmes. In that regard, new methodologies in teaching English should have to be used by the instructors to facilitate learning. Extra resources should be included in the English language programme to prepare undergraduates for a career in law.

According to the Course Coordinator of the English programme in University B, the instructors are not trained to teach Legal English. There are no workshops conducted, and they are casually instructed on how to teach. Since most instructors have been trained to teach General English, there is a teacher training programme conducted by the Department. Any new teacher is trained at the beginning in a legal writing workshop in which they are informed on how to teach, nature of materials and assessment criteria. On the other hand, data collected from majority of English instructors showed that they need specific training to teach Legal English, provided by universities.

A. Learning Environment and Learners’ Motivation: According to the Course Coordinator of English in University B, since the English classes are held in a school away from the university, the undergraduates are reluctant to attend the classes. “Most of the elder undergraduates such as attorneys-at-law, officers of the Tri-Services and the Parliament do not attend the English classes held at a school outside the University premises”. One undergraduate mentioned that “We don’t mind studying in a shed within the university itself, we don’t like to go to a school to study English.”

Undergraduates’ attendance in the English programme in University B is very poor since attending the English classes is not compulsory. Though obtaining the certificate is a must, undergraduates do not consider the programme seriously. Therefore, many undergraduates do not get the certificate. As the lecturer comments “What I suggest to solve this problem is that at the orientation programme law undergraduates should be properly informed about the value of obtaining the certificate.” The certificate is recognized by the Law College of Sri Lanka when graduates are enlisted for the final examination, which is a requirement of all the graduates if they want to be a law practitioner. However, many undergraduates in University B do not read and understand the course guide book, which is in English. Thus, law undergraduates should be thoroughly instructed by the relevant administrative staff members of the university at the orientation itself.

C. Lack of Stakeholder Collaboration: Though the idea of stakeholder collaboration in ESP situations emerged in Western countries many decades ago, still there is no collaboration in most of ESP settings in the Sri Lankan universities. It has made a negative impact on both teaching and learning in the two universities.

The lack of cooperation and attentive listening to each others’ requirements hampers teaching and learning in the universities. Though both parties are aware of the responsibilities of developing undergraduates’ skills, no one seems interested in minimizing the prevailing problems in the English language teaching programmes in both universities.

In analyzing the contacts between the departments selected in this study, it is noted that there are no formal contacts of law lecturers with English instructors in the Departments of Languages of both universities to discuss matters pertaining to English language skills of law undergraduates. There were few instances when lecturers casually asked what sort of topics that they would select when preparing materials for reading comprehension. Sometimes, they wanted to know the exact meaning of legal jargons. There were no other forms of official meetings held by the members of the two departments.

According to the Head, Department of Legal Studies, he meets the Course Coordinator of the English programme occasionally- “only at the
examination centre”. Also, both departments do not have official contacts and meetings to discuss matters related to English language needs of law undergraduates. The only mode of communication is when teaching materials are prepared, law lecturers have been contacted casually to get clarifications of the difficult areas of the legal texts. There should be cooperation between the Departments of Law and the Departments of Languages. The Head of the Department, University B suggested that there should be cooperation between the three main stakeholders: undergraduates, lecturers in law and English instructors. The English language programme should not be isolated from the legal studies programmes. It is important to link law degrees with English language programme.

V. CONCLUSION

The results of this study are of two types. First, stakeholder needs are seen in terms of language that the law undergraduates have to use in a particular communication situation. And the second is a wide range of affective and cognitive variables such as learners’ attitudes, motivation, awareness, personality, wants, expectations and learning styles which affect learning. The needs collected are presented as skills, activities, methods, materials used, assessment, time allocation, classroom environment, equipment needed and stakeholder collaboration. The results showed that majority of stakeholders in this study perceived that law undergraduates’ do not have proficiency in basic English language skills. Therefore, it is utmost important to uplift their standards with tailored fit instructions in Legal English.

This study presents some controversial issues in teaching English for Specific Purposes such as collaboration of stakeholders in Sri Lanka. Besides, this study provides insights into the possibilities of stakeholder collaboration in Legal English programmes at university level. The results of this study show what needs to be included in the ELP curriculum to meet the specific linguistic and pragmatic needs of law undergraduates. The English instructors should work in collaboration with subject specialists in order to provide opportunities for learners to engage in relevant communicative activities which are authentic.

The data collection was limited only to the stakeholders in two universities. However generalizing the results of this survey is not limited as it included a large number of stakeholders and law undergraduates of two leading universities of Sri Lanka. The future stakeholder needs analyses should identify behaviour, interests, interactions, influence and resources that each stakeholder brings in order to design successful ELP courses in Sri Lankan universities.

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Abstract- Early childhood is considered as the most important and decisive period in forming the foundation of the holistic development of one’s personal life. The type of one’s future personality depends on how he or she brought up during this period. This study has been planned to be conducted under three objectives. They were 1. Investigating the need for early childhood care and factors that fluency such care. 2. Investigating the contributors of in early childhood care development. 3. investigating the different among contribution of caregivers Buddhist, Christian Preschools in respect of strategies in early child care. The data was obtained through: Visits and observations, Interviews, Study of documents conducted 32 early childhood centers in Negombo and the Maharagama area. (Negambo- Christian 16, Maharagama, Pannipitiya- Buddhist-16. (n=32). And they were analyzed qualitative methods. In Christian preschools, the guiding principle was that each child was a precious gift of God. This belief resulted in a play oriented curriculum that maximized the choices available to children. Teachers also attempted to encourage children’s creativity and their ability to formulate thoughts and express them to others. The Buddhist schools were among the largest of any schools, some had over 600 pupils. If the present economic uncertainties continue, these schools will likely continue to be a very appealing method for parents interested in giving their children a head start in school. Yet, in spite of factors that work to blur the distinct philosophical contribution of the various religions, researcher has seen concrete ways in which the ideologies of Christianity and Buddhism continue to influence Sri Lankan preschools. In the past decade, researchers and policy experts have been grappling with the feasibility of a global definition of child care quality that could be applied across all institutions in any community across the country. The elements of "appropriate practice" have been articulated by the Policy of western province Pre School.

I. INTRODUCTION

Children are the foundation of sustainable development. The early years of life are crucial not only for individual health and physical development, but also for cognitive and social-emotional development. (unesco)

In the first years of life, children establish the cognitive, emotional and social foundation upon which they can build their futures. Early childhood is the most significant developmental period of life. A baby who is visually stimulated, continuously engaged in interactive activities, hugged, cooed to and comforted is more likely to fully develop cognitive, language, emotional and social skills, all of which are vital for success in school, in the community and subsequently in life. (unesco)

In Sri Lanka, the attention was first focused on pre-school education with the introduction of Kannangara’s reforms in 1943. As a result of 1972 new educational reforms, pre-school education spread widely as the age limit for school admission was declared as 6 years. The number of pre-school in Sri Lanka 1920-05, 1940-08, 1950-09, 1960-30, 1969-35, 1970-55, 1971-98, 1972-89, 1973-61,
In the study reported here, a qualitative approach was utilized to understand the goals, values, and expectations of Sri Lanka early childhood education programs affiliated with Christianity and Buddhism. By talking at length with teachers of these programs, researcher sought to understand how their values were embodied in the practices and curricula of the schools. These data underscore the importance of understanding how collectively held belief systems inform educational practice.

The system of early childhood education in Sri Lanka is quite extensive. Over 90% of Sri Lankan children attend at least 1 year of a licensed preschool or child care center.(Harischandra, 2009) Public preschools are funded by private, organization and state. but approximately 80% of children attend private preschools, some of which are affiliated with a religious organization (Harischandra, 2009). Like that Temple and church. All preschools and child care centers are subject to oversight by the nine provincials, which develops regulations pertaining to such issues as the dimensions and basic facilities available and the level of required teacher preparation. However, preschool teachers have considerable latitude in formulating their own programs, resulting in more diversity in the areas of materials, activities, and curriculum than is seen at any other stage in the Sri Lankan educational system. Buddhism, and Christianity, which have been intertwined with each other for since 1972 in Sri Lanka, create a rich tapestry of spiritual and philosophical thought that has had a profound impact on the nature of preschools (Harischandra, 2009).

The theoretical basis of this study is located in the literature at the intersection of anthropology and psychology. In this literature, individuals involved in the socialization and education of young children are presumed to hold cultural models that guide their actions.

Cultural models are "presupposed, taken-for-granted models of the world that are widely shared by members of a society and that play an enormous role in their understanding of that world and their behavior in frame experience, supplying interpretations of that experience and inferences about it, and goals for action" (Quinn & Holland, 1987, p. 10). Cultural models include beliefs or conceptual schemas (e.g., "children should be seen and not heard") as well as behavioral scripts (e.g.,
steps to take when a child acts in an aggressive manner toward a peer) (D’Andrade, 1992; Holland, Lachiotte, Skinner, & Cain, 1998). However, cultural models are not necessarily associated with broad social categories like nation or ethnicity (Kondo, 1990); they can be generated within smaller social units as well. Furthermore, for important topics like rearing and educating children, a number of cultural models are available in a given community. This cultural “pool” of beliefs and practices may contain elements that are in tension, or even in fundamental conflict, with each other (Kojima, 1986, 1988). Within Sri Lanka preschools affiliated with religious organizations, there may therefore be sharply divergent models as to how human relations should be organized and socialized in young children.

II. METHODOLOGY

The contribution of caregivers in Christian and Buddhist Preschools in respect of early childhood care in Sri Lanka. This study has been planned to be conducted under three objectives. They were 1. Investigating the need for early childhood care and factors that fluency such care. 2. investigating the contributors in early childhood care development. 3. investigating the difference among contribution of caregivers Buddhist, Christian Preschools in respect of strategies in early child care.

A. Population and the Sample Method

Two area located in the Western province were considered as the total population. The two area which use Negombo and Maharagama were considered as the target population. The Negombo- Christian Pre schools and Maharagama, Pannipitiya- Buddhist pre schools were selected for the study using purposive sampling method. The total sample included the teachers and children in Negombo- Christian pre schools - 16, Maharagama, Pannipitiya- Buddhist pre schools -16. (n=32).

B. Data collection methods and instruments

The data was obtained through Visits and observations , Interviews , Study of documents. conducted 32 early childhood centers. The visit to each setting included an observation of approximately 1 hour in a classroom serving early child and an interview with the teacher and one or more teachers. The open-ended interview, which lasted from 1 to 3 hours, was designed to probe cultural models regarding goals of the preschool experience, theories about the role of the teacher in facilitating learning, views about discipline and control, details of the curriculum and activities, and perceptions about the family and its relationship with early childhood education.

The observations were used as a source of examples to deepen these extended conversations. All interviews were tape recorded; in addition, detailed notes were kept during the interview.

Subsequent to the first round of data collection, a deductive process of preliminary data analysis occurred. Field notes and interview notes were reviewed and analyzed using a preliminary coding framework. Initial data displays were developed—within-case displays were created to highlight the key cultural models in each preschool, and cross-case displays were used to highlight differences and similarities across preschools. In the second round of data collection, 4 pre schools were selected from the pool of 32 preschools. The researcher spent at least 5 days in each setting, observing in a pre schools and conducting further interviews with staff. A running record was kept during the observations, with the focus being a description of the teacher’s activities and utterances. And their were analysis. A coding system was developed that permitted sections of narrative to be tagged with global categories such as goals, activities, teacher-child relations, discipline, role of the parent, and issues of individualism and group orientation.

The final stage of analysis involved a number of activities. First, all passages associated with each of the key codes were examined to obtain a sense of the variation that existed within each code. Next, the entire corpus of transcripts and field notes were reviewed to learn how the categories fit together at eachschool. A matrix was generated listing the central findings pertaining to each category for each preschool. Reactions and commentary from these informants as well as field notes and written material provided by the preschools (curriculum guides, parent newsletters, and promotional materials) were used to understand and contextualize the interview data.

C. Limitations of the Study

This study is based upon a Negombo and Maharagama. As well as there were Sinhala and English medium. Not only that medium but also religion. There were Christian and Buddhist.
limitation, however, is somewhat mitigated by the extensive analysis conducted by numerous researchers to identify differences between the two groups.

III. ANALYSIS

A. Christian Preschools

Teachers in each type of school articulated cultural models that guided their school’s curriculum and vision of appropriate practice. Although these schools belonged a variety of denominations, both Catholic and Protestant, they shared a number of cultural models that informed their programs. The amount of time devoted specifically to learn about Christianity varied among the schools. Most schools included a daily morning prayer and a prayer before and after meals. Attending a church service of some kind once a week was common. In more religion based schools, there was a considerable time for listening to Bible stories. At Christmas, they engaged in a number of activities. The Christian teachers built their programs around of the view the God’s love is the primary message of Christianity.

According to this central cultural model, children are thought to be gifts of God, and each one should therefore be highly appreciated.

This cultural model had two direct implications for the daily routine at Christian preschools. One way of respecting the individual was to allow the children considerable freedom in deciding what they wanted to do. Accordingly, free play formed the basis of the curriculum in all the Christian schools. For instance, as he came to realize the fundamental importance of individual self-determination which is prominent in Western religious thought, more preschool, became more and more convinced that it was essential to avoid teacher-centered activities:

A second implication was that the teachers placed a priority on encouraging children to articulate their own ideas and to integrate their views with those of their classmates. teachers at pre schools held a class discussion after every art period to elicit children’s opinions and ideas about the morning activities.

Teachers in Christian preschools were particularly concerned with the of children with disabilities because they felt it was valuable for the normal children to encounter someone who had characteristics that differ quite saliently from their own. Through daily interactions with children who were different from them in some ways, the students were taught to gain an appreciation for each individual but also to learn how to form relationships in spite of those differences. Perhaps because of the connection that their religious beliefs provided through Western thoughts and values. this appropriation process results in an orientation toward strengthening the individual’s powers of self-expression, fostering self-knowledge, teachers expect children to use these skills to build relationships and form the ability to function well in group settings.

B. Buddhist Preschools

From the front, the Jeeko Buddhist Preschool (Pannipitiya-Paramadhama) building looks more like an insurance company than a preschool. The imposing modern structure is three storey high, with many windows building with darkened glass prevents outsiders from seeing in. Yet, when one moves through the entryway and passes through the hall to the play area, tile roof of a traditional Buddhist temple looms into view.

They felt that kindness and consideration should be extended to all living things, including plant life as well as humans. They emphasized this message in the weekly sermon service at the temple, and they provided practical experiences, like caring for the plants of the preschool.

The emphasis on showing consideration for others is consistent with Buddhist teachings on compassion.

For Buddhists, both wisdom and compassion are needed to help relieve the pain and suffering of the mankind. The Buddhist teachers tried to be gentle in their exhortations about prayer as the means for developing a mind of appreciation. However, they were also quick to point out that Buddhism called for strength and determination as well as kindness: One of the least desirable characteristics of the unsocial zed person, according to the teachers, was a tendency to act in a selfish, egocentric manner. Therefore, the staff members at the Buddhist preschools were careful to enforce desired behavior firmly.
Opinions of the Christians, who emphasized the idea that children are "precious gifts" from God. It is interesting that Sri Lankan Christian early childhood educators hold this benign view, while the Buddhists articulate a more negative view of human nature, one that is similar to that of conservative Christian educators in the United States. The view of many evangelical American Christians is that adults must be vigilant to prevent children being victimized of to the wickedness that is the legacy of the original sin (Cleverly & Phillips, 1986).

Another strategy for avoiding individualism was to feature large group activities as much as possible. In a pamphlet for parents, the teacher makes an argument for large class sizes: teachers believe that most of mothers think that small class sizes, such as 5 or 10 children per teacher, are better for children. teacher do not think so. Among 20 or 30 peers in a class, the children are more motivated to learn by competing with each other. Therefore, class sizes of 5 or 10 students are not good at all. Of course, parental over too much interference is not favorable is not good. Children aged 4 to 5 need a group.(teacher’s idea)

Another component of the group orientation is developing the child’s weak points rather than allowing him or her to focus on strengths, again illustrated in the parent brochure: "Young children need balanced care that focuses on various aspects of development such as music, intelligence, creativity, and health (physical ability). In Pannipitiya there are future artists and future scholars. There are also future athletes, and yet it is not a good idea to develop only their athletic abilities. If you improve only the musical ability of a child who is good at music, this child will have unbalanced overall ability".(teachers idea)

Buddhists have traditionally focused on wisdom and faith as the key to salvation, in contrast to the Christian doctrine of love. Buddhism holds that ignorance, in combination with desire, are the forces that prevent people from moving beyond the pain of life on earth. A primary strategy for attaining knowledge is to study sacred texts.

The texts themselves are considered authoritative, so the believer is a "hearer of the word." Expression of Buddhist faith has traditionally focused on "pious copying out of scripture," a practice that is still considered meritorious (Dumoulin, 1994, p. 55).

In the Buddhist preschools, students were strongly encouraged to orient themselves toward external sources of knowledge, including both texts and the teacher. At Maharagama this approach was partly illustrated by the children’s memorization of sacred chants. In addition, they spend most of their day sitting at desks receiving instruction from the teacher. Literacy is a major focus of the curriculum, including in reading and writing action. Children engage in poetry reading and writing. They are involved in activities for the purpose of "developing their intelligence" in which a wide range of materials are used to stimulate basic cognitive skills such as visual perception and memory, as well as such Piagetian principles and class inclusion. In addition, children attend classes in art, dance, English, instrumental music, and singing.

At Pannipitiya preschool, a more radical curriculum emphasizes cognitive stimulation. Children are exposed to complex visual and auditory patterns, which they memorize, with no exploration of the meaning of the stimuli. For example, in one exercise, teachers clap out a complicated rhythm for children to repeat. Children are shown flash cards representing the flags of nations around the world and call out the name of the appropriate country.

What is common in the Buddhist preschools, then, is an emphasis on the ultimate authority of text and teacher as the source of knowledge. This view contrasts with the Christian emphasis that knowledge results from children’s individual exploration in combination with teacher-guided social interaction among peers. By relieving oneself of physical discomfort, emotions, and thoughts, one achieves unity of mind and body and detachment from the self. Analysis of the moral implications of the physical state is commonplace in Sri Lanka, in Buddhist as well as secular contexts. In many of the preschools, not just those that were Buddhist, the children were constantly reminded to sit up straight and keep their feet together. In the Buddhist preschools, posture was just one of the concerns teachers expressed about the knowledge development of the children.

Because much of the day was occupied with academic classes and music instruction, the children at strict Buddhist preschools had little opportunity to engage in language activity. When it did occur, language exertion was reutilized and teacher
structured. Language activities at Buddhist preschools were sometimes designed to provide a challenge that would help toughen the children.

The teachers in the Buddhist preschools were also concerned about the spiritual and language physical effects of receiving proper nutrition and exercise. A notation on the brochure for Maharagama preschool sums up the connection between nutrition, group orientation, and spiritual awareness. Some Buddhist schools were among the largest of all schools; some had over 600 pupils. If the present economic uncertainties continue, these schools will likely continue to be a very appealing method for parents interested in giving their children a head start in school.

The demands for obedience are at odds with a powerful cultural model that sees children under 7 as little treasures that should be treated indulgently—a model that may have become even stronger in recent times.

III. CONCLUSION

Sri Lankan society appear more willing to mix and match religions. Buddhism when faced with death. Yet, in spite of factors that work to blur the distinct philosophical contribution of the various religions, researcher has seen concrete ways in which the ideologies of Christianity and Buddhism continue to influence Sri Lankan preschools. The clear effects of religious beliefs on the curricula and practices in these preschools suggest that similar analyses of western province pre schools are warranted. In the past decade, researchers and policy experts have been grappling with the feasibility of a global definition of child care quality that could be applied across all institutions in any community across the country. The elements of "appropriate practice" have been articulated by charter of western province in Sri Lanka. This viewpoint tends to privilege the "scientific" approach of raising children, with little explicit recognition of the fact that collectively based ideologies—including religious beliefs—may proscribe values and practices that conflict with the approach favored by many researchers. Currently, there is so little information available about the philosophical bases, and favored practices, of church-based schools that it is impossible to speculate on the nature of possible tensions. As early childhood educators increasingly advocate moving toward "partnerships" and "dialogues" between early childhood educators and parents (Holloway & Fuller, 1999)—with each contributing their perspectives and knowledge to the conversation—the exploration of the role of religious beliefs will be increasingly imperative.

REFERENCES


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Factors Affecting to Distract the University Students’ Education in Sri Lanka

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Abstract— The Government of Sri Lanka enrols and provides free University education to approximately 20,000 students annually. Suitably qualified students are admitted to 15 Universities, 03 Campuses and various other higher Government affiliated education institutes. A majority of the students admitted are suppressed by certain internal, external and influential factors which alter the attitude and the behaviour of the students resulting an unhygienic environment to the university life and the public. To counter this issue, universities along with responsible ministries have launched many programs facilitating financial assistance and basic welfare measures to needy students. More than 50% of the students admitted yearly are benefited with these programs but to date the students unrest have not been mitigated nor a concrete solution have been established. The recently introduced Leadership Training Program conducted by Military Institutes enhance the personality of Students but is not sufficient or the best answer to the matter in question. This paper identifies the factors affecting to distract the university students’ education in Sri Lanka as a National Issue and possible solutions to encounter the situation.

Keywords— Distract University Education Sri Lanka

II. THEORETICAL BACKGROUND

According to the UNICEF Data of 2008, Sri Lanka has an adult literacy of 92% and the youth literacy is in between 97% to 99%. The reasons for this achievement is, Sri Lanka being the only country in the globe which provides education, reading materials, uniforms and a reasonable day meal free of charge to all students up to university entrance exam level. As per the records of Department of Census and Statistics, in 2012 the total population of Sri Lanka was 20,328,000 and the total no. of students up to A/L was 4,186,808 which the percentage is 20.6%. According to the 2014 updated official web page of Dept. of Census and Statistics,
the following table depicts the relationship between Schools, Students and teachers in the year 2001.

Table 1. Schools, Students and Teachers relationship in the year 2001 in Figures

<table>
<thead>
<tr>
<th></th>
<th>Public Schools</th>
<th>Private Schools</th>
<th>Piriven</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Schools</td>
<td>9887</td>
<td>78</td>
<td>583</td>
<td>10,548</td>
</tr>
<tr>
<td>No. of Students</td>
<td>4,184,957</td>
<td>97,262</td>
<td>52,906</td>
<td>4,335,125</td>
</tr>
<tr>
<td>No. of Teachers</td>
<td>194,104</td>
<td>4,330</td>
<td>4,601</td>
<td>203,035</td>
</tr>
<tr>
<td>School/Student Ratio</td>
<td>1:423</td>
<td>1:1245</td>
<td>1:91</td>
<td>1:411</td>
</tr>
<tr>
<td>Student/Teacher Ratio</td>
<td>22:1</td>
<td>21:1</td>
<td>11:1</td>
<td>21:1</td>
</tr>
</tbody>
</table>

The number of studentship is high as indicated above since the inception and the below chart made as per the informations given in GCE O/L and A/L results release on 04 April 2013 depicts the number of candidates sits for GCE O/L and GCE A/L in the year 2012. The number of students who passes the GCE A/L qualifying to enter the university in the same year which is drastically a downfall from O/L to A/L and A/L to University. Same time, the government universities can accommodate less than 20,000 student intake at any given time thus is less than 3.7% from those who passes GCE O/L and less than 7.2% of those who passes GCE A/L. Though nearly a 50% of students passes the A/L, only a fraction is accommodated in to the universities.

Table 2. Students sitting for GCE O/L, A/L and qualifying for University education in the year 2012

<table>
<thead>
<tr>
<th></th>
<th>O/L</th>
<th>A/L</th>
<th>Qualify for University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>542,200</td>
<td>277,671</td>
<td>19,340</td>
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</tbody>
</table>

Out of the total number of students who pass the GCE A/L examination, only the intrinsic worth students with heights “Z” score are being enlisted to the UGC accepted universities. The IQ level, morale and subject knowledge of these students are found to be very high. Those who qualify to follow free university education enlists with a positive mind of completing the studies within stipulated period with flying colours, but once admitted to university, some attains unionized activities before attaining the zenith of education. The activities performed by these misled students disturb the other students who really wanted to accomplish their educational goals and their education whilst degrading the economy, good name and the development of the country. Further snow ball effect is also experienced in students’ negative activities which worsen the situation day by day.

III. STATEMENT OF THE PROBLEM

The poverty rate before the year 2009 was 23% and has reduced to 9% in 2009/10 counting to over 1.8 million of heads. But the system has not taken any actions to decrease the sponsorships to students to date.

IV. METHODOLOGY

A. Aim

The aim of this paper is to examine the actual facts which change the behaviour of university students, how these changes affect their motives, the extent of disturbances to the society by the results of students’ unrest and to give possible solutions to end this issue.

B. Research Hypothesis

It is hypothesised that internal, external and influential factors affect the behaviour of the university students.

C. Scope of the Study

The study was focused on the university students of UGC approved state universities in the year 2014.

D. Choosing of the Sample

The universal population of the study covered students of all the universities in Sri Lanka. The researcher randomly selected 25 students from Colombo centred universities and 25 from rural universities.
E. Method of Data Collection
Since the research is a field study to find the factors affecting to distract the university students education in Sri Lanka and possible solutions to rectify the same, required data were gathered through a questionnaire disseminated to selected sample. 02 weeks were given to respond and same was further extended by additional 02 weeks to collect maximum responses.

F. Data Analysis
Data were analysed manually.

G. Limitations.
Out of 50 questionnaires disseminated, only 38 responded even with extended time period given to them to response. The freshers to universities were keen in answer but senior students were reluctant to respond.

V. PROBLEMS ENCOUNTERED BY STUDENTS ON ENLISTMENT

The students entering to universities are not from a homogeneous society but belongs to different cultural, economic and social groups with a common vision of a respectable degree within a stipulated time period and an elevated lifestyle after graduation. Since the day of admittance, many of the students from the rural and or lower income families faces many difficulties in their university life. For this study, these difficulties are categorised in to three factors namely internal, external and influential factors. The internal factors are congenital and the external factors associate with the results of internal factors. Influential factors are associate with the experience the students gain during their university life. So much the efforts made by authorities, at a later stage the students’ behaviour is changed with the influence of third factor which above identified as Influential factor.

a. Internal Factors
This paper consider Language barrier, inferior personality, lack of vision, Depression, Home sickness, Poor Time Management, and Social Status associate with deprived socio-economical background which inherited to students at the time of enlistment are considered as Internal Factors herein.

b. External Factors
Food, clothing and shelter are the main cost factors of a student during university period and ability in fulfilling these cost factors motivates them to concentrate towards study. Inadequate economic strength to fulfil these requirements leads male students to earn by way of working in petrol pumps and security companies performing night shifts whilst certain female students reluctantly but compelled to work in Spas and at times as sex workers. These factors are identified as External factors to this study.

c. Influential Factors
The new society, sub groups and the culture students get in to, Political affiliations and teachings, Uncertainty of the future, Influence from senior students, and fear and obligations have identified as Influential factors in this study.

VI. STUDIES CONDUCTED IN OTHER COUNTRIES

Various countries have conducted studies to find out deriving issues of students of those countries. It was observed that some of the issues faced by...
those students are very much similar to what our students face here. Anyhow it was pragmatic that there are some factors which are non-similar to University students of Sri Lanka. It was identified that non-similar factors are mainly due to cultural indifferences and the education system they are in. Factors such as Alcoholism, Relationships, Parting, eating disorders, Sexual Assaults and Harassments, Childhood Issues and Traumatic Events are Cultural bound and choosing a Major, Study, Job and Wealth, Lack of Exercise, and Sleep Disorders are Education System bound. Anyhow the outcomes of the students due to all the factors in other countries are not similar to Sri Lanka as many Universities in the foreign soil provide University Education on payment and many students have an obligation to the education they have as it had been done on their cost.

VII. EFFORT BY SRI LANKA GOVERNMENT TO MITIGATE STUDENTS PROBLEMS

To cushion these Internal and External factors, Universities along with certain Ministries have made several efforts which the students highly accepted at the beginning of their University Career but highly challenge the same with time. Mahapola Scholarships, Bursary Loans, Endowed Scholarships, subsidised meals, accommodations and Leadership Training are the key elements focused by the Governments to date which believed to be main factors of smoothing students' problems. Mahapola scholarship is awarded to 10,000 students yearly nearing 50% of the university entrance with an annual cost of Rs. 25 Million. Bursary too provides financial assistance to needy students subjected to the approval of UGC. Unfortunately respective authorities have less aware of the Influential Factors thus have paid less attention to cater this issue other than introducing Leadership Training. The present Leadership training have somewhat level the internal and influential factors, but it itself cannot level entire factors which affect students mental shift.

VIII. CREATION OF STUDENTS UNREST

Upon the attempts made by relevant authorities to alleviate the students difficulties, students unrest upsurge time to time with violent behaviour where the established order take opposite actions in means of legal or administrative. Students’ Unions of the Universities have acknowledged these actions as Students’ Human Rights violations which they claim as per Students’ Human Right Report 2013, that there have been 524 cancellations of classes, 104 external disciplinary inquiries, 67 Mahapola cancellations, 104 Law suits and 44 imprisonments of students in the past year.

IX. STUDENTS ALTERNATIVES / OPTIONS

From the researcher’s angle, it is obvious that the Internal and External factors transform the students’ attitude and behaviour. This transformation is been strategically used by certain Students Organizations in the universities to take undue advantages in their favour whilst the Government Organizations have partially understood the factors affecting the students behaviour thus given only a limited solutions to demanding factors. The Sri Lankan Culture in the Universities is to seek the possibility in winning rights with unionized actions and this culture is blessed by many students’ movements. No solid solution to above identified Internal and External factors leads to poster campaigns demonstrations and sabotages actions.

X. AFFECTS TO ENVIRONMENT AND PUBLIC

University is supposed to be a Knowledge Development Agency which enhance the intellectual abilities of its customers, the students. Some public view Universities in Sri Lanka as cost centres up to a certain extent and a place which gathers GCE A/L top rankers under one umbrella, create unrest among them and generate social, economic and political turbulence. According to the majority of public view, the following have been identified as possible negative outputs of UGC approved and Government sponsored universities.

a. University Study is not Job Focus
b. Accumulation of non-job focus Graduates inventory expecting Government Jobs.
c. Students expect maximum privileges irrespective of the limits of free education.
d. University Students encounter authorities over their expected facilities.
e. Students are being provoked by the actions of the University Authorities.
f. Shutdown of universities disturbs studious and motivated students’ education.
g. Publicity by media depicts a wrong interpretation internationally.
h. Creation of Student heroes in the Universities with blind followers.
i. The actions and reactions by and of students and authorities create public discomfort.
j. State / Administrative actions to control irruptions leads to greater events.
k. Loss of students’ lives.
l. Political instability and devastations like in early 1970s.

XI. RECOMMENDATIONS

The researcher found out that there are three factors affecting to distract the students’ education in Sri Lanka and they are the main influences to students’ unrest. Considering this matter as a national issue, it is mandatory to have a concrete solution to quieten these factors. The researcher recommends the following as most possible ripostes to end up the students’ unrest.
a. Quality of the education shall be improved with latest technological aids and facilities where students may grasp the essence of the teachings.
b. University education shall be Job Oriented giving students a clearly articulated and focused future.
c. All the students are to be given Industry Exposure with a on the job training according to the stream they are in.
d. Students to be provided with Bank Loans issued by State Banks with lower interest rates.
e. The recoveries of the Bank Loans shall be recovered once the students are passed out from the universities.
f. Reasonable accommodation facilities to be provided to needy students adequately.
g. The cost of the accommodation shall be recuperated from bank loans if students wished to do so and if so to be recovered once they are in employment.
h. Effective students counselling system shall be introduced within the universality.
i. Proper system should be introduced within the universities to identify and guide students who needs counselling.
j. Endeavours shall be taken to create a friendly relationship between University Students and the Lecturers.
k. A Student and Lecturer Union to be introduced paving a path for more interactive sessions between students and the lecturers.
l. The leadership shall focus on developing of Soft Skills and creating a vision of the students.
m. Mahapola Scholarships and bursary must plan before hand and the payments shall effect from the first month of the enrolment.
n. Must introduce a forum to project their problems.
o. Universities shall be able to provide efficient and effective solutions to students’ vital problems.
p. Universities must have an efficient job bank with proper coordination with private sector and guide students to possible jobs.

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BIOGRAPHY OF AUTHOR

Author is a retired Group Captain in the Sri Lanka Air force. During his military career, he has served as the Chief Instructor of Junior Command and Staff College affiliated to University of Kelaniya which awards Post Graduate Diploma in Management to Tri Service Officers. He is a National Diploma holder in Human Resources Management of Institute of Personnel Management, graduate of Kotelawala Defence University and a Post Graduate of Rajarata University of Sri Lanka. He is reading for MPhil / PhD at Kotelawala Defence University. He is also a lecturer in Management and Occupational Health and Safety (OHAS). His research interests include Job Satisfaction and employee retention. At present he works as the Head of Aviation Security in a Private Airliner.
Impact of Music on Education of Primary Students in Colombo District

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Abstract—Education is the process of transferring skills, knowledge and habits of people from one generation to the next. Education is obtained through the methods of learning and teaching, and by life experiences. As Oxford University defines music as, “Vocal or instrumental sounds combined in such a way as to produce beauty of form, harmony, and expression of emotion”. One’s learning which is done in order to obtain education is affected by his or her learning diversity. So, it is hypothesized that music can be used as a tool of learning diversity which will be reliable to make the education of a primary student, more effective and meaningful.

Researches have been conducted about the application of ‘music for education’. But they have not researched its effect on primary students using the concentration power of music for the achievements of education.

The research was conducted as a quantitative research. Two sets of samples which each consist of 50 students of grade five were taken from Piliyandala Central College. It was decided to test the IQ of students in order to measure their performance. All of them were given an IQ paper which matches the IQ level of their age, of half an hour while one set is provided with a piece of pleasurable music throughout the paper while the other is not. Other than that, all the other factors which will affect their concentration and performance were kept equally to all the sets. This is a working paper. So, the same experiment will be conducted using the same samples twice a month for three months providing them different IQ papers.

After three months, the controlled group will be changed. Those who were kept as the controlled group will be given those pieces of music while they face tests in the rest of three months of the research. The other set will be then considered as the controlled sample and they will not be given the music. The tests will be conducted in the same manner, for the next three months and then the test papers will be collected and marked.

The expected differences of the scores obtained by two classes were assumed as the reflection of music which stimulate leaning.

Final statistical analysis using SPSS shows that the average marks obtained by the two groups; those who faced the test without any background music and those who did with a background music, does not have any significant difference. So the hypothesis is disapproved under the provided circumstances.

Keywords: Music, Education, primary level students.

I. INTRODUCTION

When the concept of globe becomes narrow day by day, people in every nook and corner of the world join hands with each other. Whereas it can be simply explained as communication, the number of aspects of development and technology in the world also expands rapidly along with it. Such; communication, development and technology began to grow even before the origin of present mankind, Homo sapiens; but it happen very slowly, through running towards an endless future at the moment also rapidly. Along with the evolution of communication, development and technology, they all carry us towards a concept called civilization or enculturation. Accordingly, the base which has uplifted the standards of development, communication and technology along with civilization and enculturation beginning from the historic ages, can be expressed as ‘Education’. Education is defined as the wealth of knowledge acquired by an individual after studying particular subject matters or experiencing life lessons that
provide an understanding of something (Anon., 2014). Furthermore, the education can be categorized as formal, informal and non-formal. Formal education is always organized and structured, and has learning objectives. Informal learning is never organized, has no set objective in terms of learning outcomes and is never intentional from the learner’s standpoint. Often it is referred to as learning by experience or just as experience. Non-formal learning is organized and can have learning objectives (Dib, 1987).

Education has deep philosophical and psychological background. In psychology it is widely spoken about memory and the theories about education. It seems too simple to say that educational psychology is the psychology of learning and teaching. It is the scientific study of human learning. But it further involves with the study of how people learn; including topics such as student outcomes, the instructional process, individual differences in learning, gifted learners and specially, learning disabilities of people (Cherry, 2014).

According to the perspectives of psychology, the process of learning can be categorized in to five main groups as behaviorism, cognitivism, constructivism, experientialism and Social and contextual (Thompson, 2014). Each of them which are developed in various eras of psychology describe how people obtain education.

Bloom’s Taxonomy (1956) describes the process of education. There it discusses about three main parts of education called Cognitive, Affective and Psychomotor. Cognitive domain describes about the process of education basically based on knowledge. Knowledge is described as facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject. According to Bloom’s theory, the knowledge gathered is compared and illustrated collating the main ideas. The application of the acquired knowledge, analyzing them, synthesizing new facts using the given knowledge, and finally the evaluation of them are analyzed by Bloom. Then the affective domain describes the way that people try to understand the pain and the pleasure of living beings. He illustrates the last domain as Psychomotor where it speaks about manipulating tools which he describes as education (Armstrong, 2001).

For the purpose of education, people have to obtain facts or information from the environment, as described above. Firstly the information are sensed by our sensory organs as skin, eyes, ears, nose or tongue. Then the information is sent to the Central Nervous System (CNS) though Peripheral nervous system (PNS). CNS consists of Brain and Spinal cord. Then, the information received to the CNS is processed in short-term memory of the brain. Later, they are transferred to the structural core of the brain. There, the information received is compared with existing memory and then stored. The parts of the brain which are related to different senses are illustrated in Figure 1. Brain consists of Stem, Cerebrum and Cerebellum. The cerebellum can be divided in to several lobes as the figure describes. The brain acts as a dense network of fiber pathways. It consists of $10^{10}$ (100 billions) of neurons approximately (Ford, 2011).

Researchers found that when two neurons frequently interact, they form a bond that allows them to transmit more easily and accurately. This leads to more complete memories and easier recall. Conversely, when two neurons rarely interact, the transmission is often incomplete, leading to either a faulty memory or no memory at all. (Ford, 2011).".

So the researches show that it is required to keep practicing or revising something in order to keep in memory. Complex set of organic compounds called “Hormones" such as Adrenalin and Noradrenaline function along with the co-ordination of Cerebellum of the brain and stimulates thoughts and perceptions of ours. The hormones which stimulate digestion, functions of tissues, sleep, metabolism,
respiration, sensory perception and excretion of human beings also help the process of education. “Extensive evidence indicates that stress hormones released from the adrenal glands are critically involved in memory consolidation of emotionally arousing experiences (Roozendaal, 2007)”. Primary students who were selected as the target group of the research shows a higher growth rate of their brains related to the other age groups of the students. The growth rate of the brain of human beings depend on their age. The growth also depends on gender, genetic factors, early life stress, environment factors and the stimulants. The figure 3 shows how the brain develops even before the birth, expands its size rapidly within first three to four years. Then the growth rate of the brain slows down. Neurone development of the embryo begins shortly after conception.

Fig. 2 Human brains grow rapidly before birth through the first year and into childhood

Thousands of neurotransmissions ensue at a time in the brain. Ultimately it results electromagnetic waves which are categorized as Delta, Theta, Alpha, Beta, and Gamma according to their frequency range, generated by the brain. Those frequency stages are as tabled in Table 1.

Among these four stages, Alpha is the most suitable stage of concentration in human mind for education, for a learning environment of human. Beta can be detected when people feel agitated, tense and afraid. Theta results due to reduced consciousness. Delta is transmitted in deep sleep. Music is the art of the application of various sounds under different formations and combinations. It is a universal language which can be understood, sensed and felt by anybody without any language barriers. The cultural impacts such as religion, language and origin or, geographical impacts such as continent, country or province impact on the differentiation of music in various locations of the world. Music can be soothing or enervating. It induces melancholy or euphoria. But as the ultimate stimulation that can make our brains, music can be apply as a tool of healing people. Music therapy is the field which uses music for the purpose of healing patients professionally.

Table 1. Frequency Stages of Brain and their Function (Miller RA.1982)

<table>
<thead>
<tr>
<th>STAGE</th>
<th>FREQUENCY</th>
<th>FUNCTION</th>
</tr>
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<tbody>
<tr>
<td>DELTA</td>
<td>0.5Hz - 4Hz</td>
<td>Deep sleep</td>
</tr>
<tr>
<td>THETA</td>
<td>4Hz - 8Hz</td>
<td>Drowsiness</td>
</tr>
<tr>
<td>ALPHA</td>
<td>8Hz – 13Hz</td>
<td>Relaxed, but alert</td>
</tr>
<tr>
<td>BETA</td>
<td>13Hz – 30Hz</td>
<td>Highly alert and focused</td>
</tr>
<tr>
<td>GAMMA</td>
<td>30Hz – 42Hz</td>
<td>Supporting role for the other stages</td>
</tr>
</tbody>
</table>

In the same way, pleasurable music can be used to enhance the outcome of education. By letting them to listen to pleasurable music their concentration can be taken to Alpha level. And also the selected kind of music, relaxation music is expected to act on them equally as students of grade 6 are not expected to expose and get used to any special style of music.

Even the primary students in Sri-Lanka (most probably grade 5 students) tend to get tensioned a lot due to the high competitiveness of the scholarship exam that they have to face in grade five (Amarasinghe, 2014). The time they should be with their family members, friends or with nature is stolen by the prevailing system of education. So the stressed mentality that they are expected to have while their studies can be settled down by the given music. So, it will be more meaningful to introduce this kind of pieces of music for children who are in such stressed states and also passing their growing ages in order to obtain more efficient results from them.

“Inputs from the environment are not always a good thing. Children born prematurely often associate the initial noise and clatter around them as painful. Research indicates that a quiet environment allows these children to catch up as
their neurons make (Semrud-Clikeman, 2014)” This statement of American Psychological Association proves the importance of “Calming music”.

The prevailing education system for primary students in Colombo district is mainly enriched with private sector, government sector and tuition. With the development of technology, education and etc., the primary education has improved a lot. New psychological theories are used in teaching students along with new technology.

The government and private schools follow the curricula which is designed by National Institute of Education meanwhile International schools target their curriculums for international level examinations such as EDEXEL or Cambridge.

Western countries experience the value of ‘music education’ of primary students. But in Sri Lanka, the application of music should be applied as well as the education of music.

II. RESEARCH OBJECTIVES

This research study aims to illustrate the capacity of alpha music to enhance the academic performances of primary students (in Colombo district) through the level of concentration generated towards the paper they answer.

It will also be a pathway to analyze the impact of music on music students and other students and to evaluate its application on fields other than education.

III. RESEARCH HYPOTHESIS

H₁: Alpha music which is provided to students (as background music) while a test can enhance the outcome of the process of education that the students are involved in.

IV. LITERATURE REVIEW

Music is an aesthetic subject which entertains human beings. Not only that, it is also a rich way of communication and helps human beings to express their ideas or emotions effectively. As most of the aspects of music are not yet discovered, the attention of scholars is paid towards various aspects of music and its applications. Education is also a wide scope where the scholars research about. Accordingly, it is an important area where the aim of scholars is towards this combination; the application of music for educational Purposes.

Steele (2014) says that the latest studies seem to be focused on the effects of classical music (or similar easy listening tunes) on chickens. Furthermore, he mentions that playing classical music to chickens in the coop will result in calmer hens and therefore greater productivity and larger eggs, since stressed chickens often stop laying, slow their laying or lay smaller eggs. With this empirical study, Steele proves the ability of concentration power of music which affected animals. He was able to observe results of a higher output from the hens by providing them pleasurable or classical music. In the same manner, the concentration gained using music is expected to act on human beings a lot in order to enhance the performance of education. Scholars have researched about access and retention of marginalized populations within undergraduate music education degree programs. The purpose of this collective instrumental case study was to examine the experiences of six undergraduates from traditionally marginalized populations with regard to their preparation for, admission to, and retention within a music education degree program (Kate R. Fitzpatrick et al, 2014). Here, the scholars study about those who study music. But in this research, the researchers study about non-music educated primary students.

The effect of early music training on child cognitive development is studied in another research which is published in the journal of Applied Developmental Psychology. Bilhartz et al. (1999) argues that their hypothesis; “There is a significant link between early music instruction and cognitive growth in specific non-music abilities” has proved by their studies. Furthermore they say that the findings of their study proves the theory that children trained to produce music vocally and on a glockenspiel-sequential training that uses and develops kinesthetic, aural, and visualization skills-become better able to perform the abstract reasoning tasks measured by the Stanford Binet Bead Memory subtest.

As Gold, Frank, Bogret and Brattico (2013) argues, mounting evidence links the enjoyment of music to brain areas implicated in emotion and the dopaminergic reward system. Furthermore they argue that dopamine release in the ventral striatum seems to play a major role in the rewarding aspect.
of listening to music. Even though music entertains us all, the outcomes depend on the desires of the listener. Furthermore they have researched about effects of music in reinforcement learning according to the listener. The scholars have conducted their research with adults (undergraduates and people above that age limit) as participants. Musicians, non-musicians and amateurs who have music experience for a number of years have been taken for the research. People who were interested and had specialized in music were evaluated and researched. Some of them were given selected varieties of music to listen for over about two years. But this research paper analyzes primary students who do not have special trainings or special practices about any sort of music rather than their inheritance and the natural music they happened to listen being citizens of the environment of Colombo district in Sri Lanka.

Primary education should be given a considerable attention; as well as the university education, as it will be the foundation of one’s future. Accordingly, the growth stage of a child is the turning point of that child’s life. Unmet needs of a child could lead his life into violence in future. But, a child who is well loved and cared has a possibility of having good personalities and capabilities in future. “I am not a believer in the ‘blame the parents’ approach to life. I do believe that our childhood experiences, which include parents, combined with our own personalities, reaction to siblings and peers and the context of our lives send us off on a path with a particular set of beliefs and patterns that have a huge impact on our future relationships (Smith, 2010)”.

V. RESEARCH DESIGN

The school which was selected for the research is a mixed school where both male and female students study together. There were nine classes in which each class consists about 30 students of grade six in the school. Out of those nine, two classes (Named “A” & “B”) of grade six which consisted of 30 students in each, who had just passed from grade five to six were selected randomly for the research. Both sets were given an IQ paper which matched the IQ level of their age, of half an hour, while class A is provided with a piece of pleasurable music (Alpha music/Relaxation music) throughout the paper, class B is not.

And all the students of both classes were instructed to answer the IQ papers well, mentioning that the papers are going to assess their IQ level. Only the two authors of the research along with six prefects of the same school participated in conducting the test for half an hour. So each class got one of the researchers and three prefects. The students were not under the supervision of their teachers during the period of the test.

Furthermore, class A was informed that they would be listening to alpha music which can help them concentrate their minds throughout the test in the coming half an hour. Relaxation music was downloaded in video format from the site PURERELAX.TV (2013) and was converted to an audio format. Before the music was played, they were asked to listen to all the sounds that they here from their surroundings. While they listen to those sounds, the relaxation music was begun to play. The music consists of sounds of nature which are closer to children a lot. As an example, one of the pieces of music begins with the sounds of the sea waves. It precepts a scenery of sea which can really relax human minds. The students were asked to pay attention towards the sounds from the surrounding of the class and then they were taken towards the music which was played inside the class, step by step. Finally, they were informed to answer the paper well, using the concentration they obtained by the given music. The given music was continued throughout the test. After half an hour, papers were collected and marked.

One of the classrooms consisted of an area of 6m×6m approximately. Accordingly, the relaxation music was provided to the classrooms using a 104dB Subwoofer System (AL 251X)".

Other than that, all the other factors which can affect their concentration and performance were kept equally to all the sets. The same test was conducted using the same samples twice a month for a period of three months while providing them
different IQ papers. Then, the papers were marked and the marks obtained by the students were recorded for analysis. Further, average marks of each student from their last two term tests were obtained and then, mean of the average marks of each class were calculated.

As this research paper is a working paper, the next phase of the research will flow as follows. After three months, class “A” will be changed in to the controlled group and they will not be given any music while the test. Then the class “B” will be given those pieces of music while they face tests in the rest of three months of the research. The tests will be conducted in the same manner, for the next three months and then the test papers will be collected and marked.

All students who participated in the research were healthy. None of them showed any physical or psychological disorders. And also it was confirmed that they did not show any history of psychological or social disorder.

The tests were conducted in the second period of the school time table. As it was morning, the students of both classes were relatively active. It was decided to check the IQ level of the samples by an IQ paper in order to measure the performance difference between the two groups due to the assumed influence of music. Moreover, in this research, the amount of intelligence that is been expressed from the students under the stimulation of music and without that stimulation is assessed. Intelligence which is also called intelligent quotient (IQ) is described as the ability to think, solve problems, analyze situations and understand social values, customs, and norms. So the given IQ paper consists of all above described areas of IQ. And each of the given IQ papers consisted of 40 multiple choice questions while each of the question carry three answers for choice. Those papers were prepared adopting the grade five model paper set produced by Jayasinghe (2014). Even though the duration of the paper was set for 45 minutes for grade 5 students, the samples were given only a half an hour to answer those papers as they had already passed grade 5.

Class settings were same for both classes. They were not sound proof as they were covered by a wire mesh. And the selected two classes were located in the ground floor of the same building, but away from each other. So, all students were affected by the same surroundings. But the classes were not affected by the music provided to each other. The average of the students belong to families who were in the middle class economy. So the economy of the students may not be a factor which can affect the outcomes of the tests. Also all of the students come to school daily from their home. No one was accommodated in a boarding house or school hostel. So the psychological factors which can arise due to being away from homes cannot affect the final results. As all students were from around Piliyandala city, they may encounter somewhat equal social and cultural background belonging to that area.

Through the research, it is expected a considerable difference in overall performance of the students of controlled group and the other. The assumed enhance of marks of the group which listened music while the tests was hypothesized, as due to the concentration gained through provided background music. The marks of each group for tests can be analysed using the statistical software, SPSS to confirm whether there is any significance difference between them or not. Mean mark of each class gleaned from the student’s average marks at their last two term tests can be compared with each other to see if there are any significance differences among the two classes before joining them with the research.

VI. DATA ANALYSIS

The drawn box plots for each data set showed that all the data were normally distributed without any significance outlier among them. So, the average marks of the tests obtained by the students of each classes are calculated. Level of significance is considered as 0.05 while the two samples are analyzed and compared using the ‘Independent Samples T-test’. The results of the Independent Samples T-test are presented in Table 2.

Table 2. Summary of average marks of the Independent Samples T-tests

<table>
<thead>
<tr>
<th>Class</th>
<th>Mean of 2&quot;nd &amp; 3&quot;rd Term Tests</th>
<th>First Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean of Test set 1</td>
<td>Mean of Test set 2</td>
</tr>
<tr>
<td>Class A</td>
<td>64.150</td>
<td>68.667</td>
</tr>
<tr>
<td>Class B</td>
<td>68.200</td>
<td>72.500</td>
</tr>
<tr>
<td>P value</td>
<td>0.071</td>
<td>0.141</td>
</tr>
</tbody>
</table>
Above P values are named as, $P_1=0.071$, $P_2=0.141$ and $P_3=0.222$. Means of 2nd & 3rd term tests of class A and B are compared having hypotheses as below.

$H_1$: There is a significance difference among two groups (A and B) before they face tests.

$H_0$: There is no any significance difference among two groups (A and B).

$P_1$ being higher than the level of significance (0.05) proves that there is no difference between the average marks of the students of class A & B, initially before they participate in the research. It shows that both classes are equal in their average level of IQ initially. $P_2$ and $P_3$ show that exposure to music during IQ tests during the research has made no any significance difference on the performance of two groups (A and B).

Furthermore, the followings are the assumptions made in order to compare samples using “Independent Samples T-test”. Dependent variable (IQ level of students) is continuous (Scale is ratio). And also the Independent variable has two categories as class A (with music) and class B (without music). The data observed from two samples were totally independently from each other. No any student represented both of the classes at the same time throughout the whole test.

VII. OUTCOME

Hypothesis disproved. Exposure to music during the tests has no any significance difference on the performance in the IQ level of the students.

VIII. FURTHER RESEARCHABLE AREAS

During the research it was unable to conduct tests having music, more than six times, twice a month for a duration of three months. The difference of the performance of two samples may be measurable more accurately if the tests were conducted throughout a period of few years. When selecting the sample of the research, a mix school was selected. But the percentage of gender within a class was not taken in to consideration. But it is vital to go on checking the impact of music for the performance of the students considering the gender difference of them as well as checking the responses of the students with no gender specification.

The students were checked providing IQ test only. But the given music may affect specially on their mathematical skills and reading skills. Or even they may affect the chemical balance of the brains. Or else the physical features such as blood pressure, heart rate and etc. Those areas should also be tested.

Western or Eastern classical music differ from relaxation music. So their impact on humans also vary. Music in the world which differs due to language, land and religion may impact on various sets of people in each and every nook and corner of the world differently.

Attention of the study was towards healthy children of 10 to 11 years of age. But it was not towards children with special needs. As Sousa (2001) says, those who suffer from mental or physical disorders, reading, writing or another kind of educational disorders which affect education may respond to given music in different manners. And also, students who have special abilities or skills respond to music in a different manner. So both categories should be considered for the study.

IX. CONCLUSION

In conclusion this paper is part of an ongoing research in the area of music as a learning aid for education. The initial phase of the study for the base was conducted to empirically investigate whether the music can enhance the outcome of education of primary students. The test designed and conducted disproved the laid hypothesis in this paper. Yet it is required to carry the test for several times to bring the solid demarcation for the findings of the research.

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Animal Figures found from Mosaic designs at Karagampitiya Subodharamaya

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Abstract— The main objective of this research paper is to explicate about animal figures found in Sri Lankan mosaic designs with special reference to mosaics at Karagampitiya Subodharamaya. The methodology of this research paper consists of field research and library survey methods; field research method was highly emphasized to collect data. This temple has a great significance in terms of archaeological, anthropological, historical and art historical aspects. Karagampitiya Subodharamaya is located at Karagampitiya village in Dehiwala divisional secretariat which belongs to Colombo district in Western province. It has an extended history from the period of king Parakramabahu VI (1412 - 1467 AD) and it underwent several changes during the colonial period of Sri Lanka. A piece of art work created by placing coloured segments of tiles, porcelain, glass, stones and coins in a pattern to create a picture is called as Mosaic art. This art tradition has a ranged history from BC and in the world Mosaic art, developed in various periods according to the subject and features. Floral figures, animal figures, geometric shapes and some other objects which were created with mosaic art tradition could be seen at the Image house and at the Sathsathige. Among these mosaic designs at the image house; animal figures can be considered as a limited art historical source due to the used features, structures, colours and shapes. According to the collected data, it could be identified that both real and mythical animal figures; such as Tusker, Horse, Lion, Bull, Rabbit, Goat, Unicorn, Fish, Peacock, Parrot, Hen and Snake were designed using mosaic designs. These animal figures could be categorized as birds, quadruped, reptiles and fish. As per the main objective; foreign influences and special features of created animal figures, reasons for designed animal figures, present situation and reasons for weathering of mosaic designs are also discussed in this research paper.

Keywords— Art History, Karagampitiya Subodharamaya, Mosaic

I. INTRODUCTION

According to the main objective of this research paper animal figures found from mosaic designs at Karagampitiya Subodharamaya, are analysed in detail. In this research; field research and library survey methods were used to collect data. However, as the methodology of this research; field research method was highly emphasized. This research paper discusses about the historical background of Karagampitiya Subodharamaya, historical background and development of mosaic art, mosaic designs at Karagampitiya Subodharamaya, animal figures found in mosaic designs at Karagampitiya Subodharamaya and special features of these animal figures.

Karagampitiya Subodharamaya is generally known as “Karagampitiya Temple” because it is located at Karagampitiya village.

The historical background indicates, that during the Kotte period (1412 - 1467), King Parakramabahu VI, gifted the village “Madimala” to the Natha deva at Papiliyana. According to the legends, the western section of the village Madimala was known as “Karagampitiya” and the eastern section of Madimala was known as “Nadimala”. Karagampitiya village used to supply coconut and fish to the Kotte Palace (Chutiwongs, 1990).

King Parakramabahu VI, built a deva at the bottom of a Nō tree (Mesua ferrea) on the hillock of Karagampitiya; to protect the fishermen from foreign attacks and to have blessings of God. During the Portuguese period, the deva was destroyed and its stone pillars were used to build St. Anthony’s Church at Mt. Lavinia. During the Dutch period, a Dutch Church and a Resting place (Ambalama) were built at Karagampitiya. The
Methodist Church of Mt. Lavinia was built using the old stone pillars of the Dutch Church during the British period (1818). However, as at now, the stone pillars have been returned to the Karagampitiya temple. The remaining constructions were completed in 1795 during the period of King Rajadhi Rajasinghe (Chutiwongs, 1990).

The historical Paintings at this temple were important to study the history and traditions of Sri Lankan Paintings. There are Painting series in the image house and in the sathsathige. In the chanting hall (Pirith Mandapaya) which is located inside the preching hall is indicating the paintings of Perehara ceremony. At present the temple has a Stupa, image house, Bodhi tree, devale, preaching hall, chanting hall, library, bell tower, monastic residencies, sathsathige and Sri Padage. These principal buildings were built according to the nature of the land.

Mosaic is the art of creating images with an assemblage of small pieces of coloured glass, stone or other materials. It may be a technique of decorative art, an aspect of interior decoration, or of cultural and spiritual significance (http://en.wikipedia.org/wiki/Mosaic,2013.09.20).

"The New Encyclopaedia Britannica" defines about the "Mosaic" as "In art, surface decoration of small coloured components. Such as stone, minerals, glass, tiles or shell closely set in to an adhesive ground" (The New Encyclopaedia Britannica, 2010).

Mosaic art tradition has extended history from BC and in the world it is developed in various periods according to the subject and features. Hence; the historical background of mosaic could categorized as Greek and Roman mosaic, Christian mosaic, Jewish mosaic, Middle Eastern and Western Asian mosaic Art, Modern mosaic (The New Encyclopaedia Britannica,2010; (http://en.wikipedia.org/wiki/Mosaic,2013.09.20).

In Sri Lanka, there could be found only limited examples related to Mosaic art tradition. Maduwanwela Walawuwa, Karagampitiya Subodharamaya and some other temples in down south could be considered as the places with mosaic designs.

II. MOSAIC DESIGNS AT KARAGAMPITIYA SUBODHARAMAYA

Mosaic designs at Karagampitiya Subodharamaya can be seen in the image house and in the sathsathige. Porcelain products, tiles and coins were used as materials to create mosaic designs. Most of these porcelain products and tiles were imported from England, Holland, China and Japan.

Mosaic designs could be seen in the sanctum and corridor of the image house (eg. Fig 1). The floor of the sanctum is separated into squares and mosaic designs of floral figures such as coconut tree, banana tree, flower tree, lotus flowers and some other trees are created on these squares. Further, there are figures of umbrella, flag, sesath, chamara and punkalasa. Apart from that, there are figures of clock and flower pot. Further there could be seen some designs created with mosaic art tradition at the corridor of the image house. The animal figures found in the mosaic designs of this image house will be examined later on this Paper.

Figure 1. Mosaic designs at the sanctum of image house

Inside the sathsathige and outer corridor of the sathsathige; contains with mosaic designs. Inside the sathsathige, decorated with geometrical shapes (Circle, Square, Diamond, Octagon and Pentagon) created by the Mosaic art tradition (eg. Fig 2).
Figure 2. Mosaic designs at the Sathsathige

A rectangular area of two feet in width and thirty five feet in length at the corridor of *Sathsathige* is decorated with mosaics. The Gothic style pandal of the *Sathsathige* is also decorated with mosaic art tradition (eg. Fig 3).

![Figure 2](image)

**Figure 2. Mosaic designs at the Sathsathige**

Figure 3. Gothic style Pandal of the Sathsathige

The animal figures inside the sanctum can be categorized as quadruped, birds, reptiles and fish. According to that classification; tusker, horse, lion, bull, rabbit, goat, animal from deer family and unicorn can be categorized as quadruped. Cock, hen, peacock, peahen, parrot, duck, goose, pigeon, cormorant and turkey; could be categorized as Birds. The snakes’ figure could be categorized as Reptile. There is only one figure of fish. Furthermore, these animal figures could be categorized as real world animals and mythical animals.

Apart from the unicorn; all the other animals could be considered as real world animals. Unicorn could be considered as a mythical animal. The unicorn is a legendary animal that has been described since antiquity as a beast with a large, pointed, spiralling horn projecting from its forehead (http://en.wikipedia.org/wiki/Unicorn, 18.06.2014). Further, unicorn is described as a mythical animal resembling a small horse but with a long, straight horn growing out of its forehead. Often it was described as having the legs of a deer and the tail of a lion.

![Figure 3](image)

**Figure 3. Gothic style Pandal of the Sathsathige**

The unicorn figure created with mosaic art tradition at the Karagampitiya Subodharamaya, shows special features of the mythical animal (eg. Fig 4). Moreover, with reference to the legends; the body of horse, tail of lion, legs of deer and the horn; formed with white colour could also be seen. Mane of the horse is white in colour. The figure indicates a riding position. But four legs of the unicorn are directed to the front. Hence, we could identify an abnormal posture. Further, the back two legs have been created using blue colour fragments. This might have happened later as a result of weathering.

![Figure 4](image)

**Figure 4. Unicorn**

The tuskers’ figure at this temple is also formed with white colour fragments (eg. Fig 5). Blue colour fragment with floral design have been used to create the ear of the tusker. The tusks are formed with white colour. The horse figure is also white in colour. The mane and hair of the tail, have been created using small fragments (eg. Fig 6). The horse figure consists of a riding position.

![Figure 5: Tusker](image)  ![Figure 6: Horse](image)

**Figure 5. Tusker**  **Figure 6. Horse**

The figure of lion has been created with white colour fragments. The hair around the neck and the tail are created using small fragments (eg. Fig 7). The figure of bull is also formed with white colour fragments and indicates two horns and the hump (eg. Fig 8).

![Figure 8](image)
The figure of goat is created with white colour fragments. The horn and the hair under the chin could also be witnessed in this figure (eg. Fig 9). The figure belongs to animal of deer family; formed with white colour and indicates the horn on its’ head (eg. Fig 10).

The figure of leopard is formed with white, yellow and black colour fragments. White, yellow and black colour round fragments are used to create spots on leopards’ skin (eg. Fig 11). The rabbit figure is formed with white colour fragments (eg. Fig 12). This mosaic design of the rabbit indicates the flexibility of the long ear.

Ten figures of birds could also be found. The figure of cock formed with white, yellow and red colour fragments (eg. Fig 13). Those colours are used to indicate wings, feathers and comb of cock. Moreover the figure of parrot is formed with white colour and red colour used to indicate some feathers, beak and neckless (eg. Fig 14).

A duck and a peacock formed with white colour could also be witnessed (eg. Fig 15). The figure of duck can be identified due to the shape of beak and shape of foot. The figure of peacock is created with long feathers and crest (eg. Fig 16). Several sizes of fragments have been used to create wings, feathers and crest.

Furthermore, based on the shapes of beak, neck, body, wings, feathers, leg and foot; can be recognized bird figures of cormorant (eg. Fig 17), turkey (eg. Fig 18), goose (eg. Fig 19), hen (eg. Fig 20), peahen (eg. Fig 21), and pigeon (eg. Fig 22).
The figure of snake represents the category of reptiles. Blue, yellow and white colour fragments have been used to form the snake figure in mosaic art tradition (eg. Fig 23). The body of the snake has been formed with dotted blue colour fragments, to illustrate the texture of the real snake skin. Further, it indicates the features of the snake head. Moreover, a figure of fish has been formed with white colour fragments (eg. Fig 24) and it indicates the features of a real fish. Such as scales on skin, operculum (gill cover), dorsal fin, pectoral fins, anal fin, pelvic fins and caudal fin.

Therefore, based on these animal figures, we could assume that they have unique features. All the animal figures have been created with white colour and the fragments consists with shapes of animal body. Such as legs, heads and horns. Having analyzed the animal figures in Art historical aspects can be recognizes that the Artist used white colour for animal body and used particular colours to indicate special features of animals. Eg: - Parrots’ necklace (eg. Fig 14), Leopards’ skin (eg. Fig 11), feathers of birds (eg. Fig 13, 14, 20).

When concerning the figures of quadruped; it could be witnessed that the artist has included lions’ and horse hairs (eg. Fig 6, 7), bulls’ hump (eg. Fig 8), leopards’ skin (eg. Fig 11), various shapes of legs and feet, ears, eyes, mouths and tails, tuskers’ tusk, bulls’, goats’ horn. Having analyzed the figures of birds we could identified various types of beaks, wings and feathers, various shapes of eyes, mouths, legs, feet, comb (eg. Fig 13, 20), and crest (eg. Fig 16, 20). Including the particular features of animals in these mosaic designs, were important in art historical aspect. Generally the mosaic artist created an outline around the animal figures by using blue colour fragments (eg. Fig 5-12, 15-22, 24). Because of that the animal figures were highlighted from the background. Further, we could see different shapes and different sizes of fragments used to form the shape of quadrupeds’ body structures and feathers of birds. Moreover, can be seen the features of animal faces by engraving the porcelain products (eg. Fig 6, 7, 11, 12, 17, 20, 23, 24). The mosaic artist has included a belt around the necks of horse, goat and animal of deer family (eg. Fig 6, 9, 10). That may indication of domestication. However, could be seen a belt around the neck of the unicorn (eg. Fig 4).

Apart from that, can be seen two special components of mosaic design could be seen at the two entrances of sanctum at the Image house. One is consists of two lion figures and a figure of flower pot (eg. Fig 25). Other one consists of two unicorn figures and figure of a flower pot (eg. Fig 26). These two components illustrates a combination of Sri Lankan and foreign culture.

At present; the floor mosaics at Karagampitiya Subodharamaya have been destroyed due to
lightning of oil lamps, carelessness, lack of proper cleaning, new constructions and some human activities. Thus, it is a paramount importance that we implement proper methods to protect this limited source. Commencing awareness programs could be one solution to this problem. Further, as a conservation method can be fixed a hard glass cover could be fixed on the floor which is decorated with mosaic art tradition.

III. CONCLUSION

Having studied the animal figures at Karagampitiya Subodharamaya; it could be identified there is a great significance of these figures due to the uniqueness of forming special features of animals, managing various shapes, limited colours and difference size fragments to create figures and the limitation of animal figures formed by mosaic art tradition in Sri Lanka. In my point of view there is a combination of Sri Lankan and foreign cultures which is confirmed by the figure of unicorn, which mostly belongs to the legends in foreign cultures. Apart from that, the animal figures formed at this image house; can be considered as a continuous process of using animal figures in Sri Lankan art history. Furthermore, it could be assumed these animal figures were used for fill the space at the floor of image house. Moreover, mosaic designs at Karagampitiya Subodharamaya have great significance of art historical, archaeological and historical aspects. Because of that, should have to protect these limited art historical Source.

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Fashion Syntax: Concept of Contextual Dependence

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Abstract—Fashion is a mode of language where man’s has the ability to transcend his expression. Like language in this sense, dress functions as a kind if syntax, according to a set of more or less constant rules depending on whether it is dealing with traditional costume fashion. When article of clothing (item) and new dress forms have many possible meanings there is likely to be a certain degree of ambiguity. Moreover among the articles of clothing that are worn together many have numerous possible meanings and they also interact with one another to produce additional ambiguities. A contextual perspective allows people to manage and perceive appearances in everyday life, or the historical contexts in which people find them. The contextual approach enhances the people’s understanding not only of appearance from people’s viewpoints, but also how common such viewpoints are within a culture. The process of contextualizing allows people to see changes in the meanings of dresses as contexts dissolve into one another.

The Kotte period of Sri Lanka marked the culmination of emerging novel dress features. The existing fashions were mixed and matched with South Indian and traditional Sri Lankan items of clothing. With the Portuguese invasion novel dress fashions were introduced with new articles (items) such as attached collar (tippet), buttons, cuffs, hats, and new dress forms like trouser (pantaloons) coat (cabaya) and jacket (hattaya). The royalties adopted new dress features into their original native dress. The objective of the present research is to identify what type of articles of clothing did royalty inspire and embraced and how did they created their new dress forms and represented themselves in different occasions which assigned different meanings in order to the each contexts. The fashion language of the novel dress forms brought a huge impact to the successors of the royalty and for the elites who served the King as fashion is trickled down from the supreme to the rest of the strata of the society. The historical narrations of Sri Lankan dress fashions of the royalties show that the religion of the particular society played a pivotal role in forming the ideology of the wearer. However consequently with the advent of the Portuguese to Ceylon in 1505 AD the

I. INTRODUCTION

During the sixteenth century the Kotte era (1411-1597AD) marked a new turning point in Sri Lankan dress fashion. The Portuguese conquered the island and established their power gradually throughout the lowlands of Sri Lanka including Kotte. Their influences in political, economic, cultural and social strata were huge and directly affected the lives of people of the society. By this time the royalty was directly inspired by western sartorial trends and led drastic changes in the way of practicing traditions of Sri Lankan fashion forms.

The royalty had direct contacts with the Portuguese Kings and diplomats and they embraced certain items of dresses, mixed and mingled with their traditional dress and created a novel dress. This process of mingling, of mixing and matching of several dress details is called hybridization and showed a dramatic composition of western, south Indian and Sri Lankan dress details. The royalty inspired the Portuguese dress items such as attached collar (tippet), buttons, cuffs, hats, and new dress forms like trouser (pantaloons) coat (cabaya) and jacket (hattaya). Besides they created novel dress forms by mixing the new items into their original native dress. The objective of the present research is to identify what type of articles of clothing did royalty inspired and embraced and how did they created their new dress forms and represented themselves in different occasions which assigned different meanings in order to the each contexts. The fashion language of the novel dress forms brought a huge impact to the successors of the royalty and for the elites who served the King as fashion is trickled down from the supreme to the rest of the strata of the society. The historical narrations of Sri Lankan dress fashions of the royalties show that the religion of the particular society played a pivotal role in forming the ideology of the wearer. However consequently with the advent of the Portuguese to Ceylon in 1505 AD the
state religion was instrumental in changing the ideology of the royalty after their conversion to Christianity.

A qualitative method has been adopted for this research. The conceptual frame work of the study is based on the Semiotic model. The Semiotic model seems to be a more plausible and relevant theory in the matter of understanding how meanings are generated. Semiotics is a model or theory of signs and revealed meanings by social interaction. Sequence of in-depth observational studies carried out with temple murals, cloth paintings, wood and stone carvings, sculptures and special ivory carvings at Munich Treasury in Germany along with the continuous literature review. In the research many multiple observations were carried out. A protocol or a particular system for recording information is needed to note observations on the field. Therefore observations are recorded as descriptive notes with multiple descriptive sketches. Descriptive notes include description of physical setting, important features of the painting, or sculpture, series of sketches of distinctive details, parts, features, forms and shapes of observed dresses and personalities. Demographic information was also included with dates, names of the places and field settings.

For literature review used documented manuscripts, chronicles, books, original records of foreign travellers, published research pertaining to the area and inscriptions used for gather and sort data. The process of the research is inductive; the researcher builds abstractions, concepts and theories from details.

Validity of the data were confirmed with cross checking literary sources along with random interviews with selected scholars, artists, village headmen, high priests of the selected temples with gathered images. Data analysis was conducted as an activity simultaneously with data collection, data interpretation and writing narrative sub topics. There are several simultaneous activities involved in the research process. The analysis is based on reduction (de-contextualizing) and interpretation (re-contextualizing).

Among the period dress fashions selected dresses such as Long coat (cabaya) collars (tippet) Short jacket (hettaya) Short jacket with collar (manthe hettaya) Long cloth (thuppotti) and Trouser (pantaloons) were observed and analyzed. The systematic pictorial analysis reveals many new meanings created, which influenced transmission of its “context”.

II. FASHION: A VISUAL COMPONENT

In cognitive sciences, the perspective of a social significance is linked to taste and the sense. Stereotypical repetition of types of behaviour and images, filters, encrusted with sense and the senses where signs, especially visual signs become imperatives. Fashion is its visual component, is communicated as the new, the unexpected, the unpredictable, but also signifies possible meanings to the society.

A. Fashion Syntax

Articles of clothing (items) have possible meanings. Sometimes it relates or differences are brought in ways in which items succeed each other or combine together in a chain of discourse. This can be considered as the difference between things that may come before and after one another. When a person chooses body adornments, attention is usually paid to how well the person’s choice of head dress, lower body dress, jewellery and accessories, for example, considering the king’s attire, fit together as an ensemble. Furthermore difference could be seen between the crowns, lower body dress, jewellery and accessories of the king’s attire. All were necessary to form or signify the whole king’s attire. It is also the difference between the lower body dress, head dress, jewellery, and accessories of other males’ dress. The king would normally wear a crown, jewellery and lower garment. All were necessary to form the signifying whole of the ensemble.

Each area of the body from the top of the head to the toes can be a location for the articulation of styles of dress. According to the paradigmatic relation similar items of dresses can be classified theoretically. The relationship between items in a paradigm is ‘this or this or this’ also it runs horizontally. (Barnard 2002, 90) At every location of the body, the person has a choice regarding how to articulate with styles of adornment, whether to wear a crown or not, a necklace or not and so on. This pattern embedded in sign and sign systems is identified by Roland Barthes as categorical opposition. The choices are regulated by the paradigmatic relation of the society’s particular
dress code. As a system of signification all dress codes regulate all fashion alternatives such as size, shape, colour, and style. (Gottdiener 1995, 38)

III. CONTEXTUAL PERSPECTIVE AND APPEARANCE VIEW POINTS

Contextual perspective allows people to manage and perceive appearances in everyday life considering the actual social situations or as historical contexts within a culture.

A. Cultural View Points Regarding Appearance During the Kotte Period
The King was the culminating point of the pyramid in society and represented the state and the centre of political life. Beside the term Rajan and all other terms, titles for the King already existed in Sanskrit literature in Sri Lanka. The concept of King is distinguished by the term Maharaja (Great king) or Rajadhiraaja^III (Ruler of the King)\cite{Pathmanathan,1986/87}Mahipathi (Lord of the earth) andDeval(god).The title corresponds to ‘Our Majesty’.\cite{Geiger 1960} Over a long time throughout history culture built certain stereotypes for the King as a living God that affected the cognition of people in society. The representation of the god in sculpture or in paintings therefore could be hypothesized as the representation of a King. Because the artists of the period had no such imagination of how the god should be represented, he saw the live model of the King who was considered the Lord of the earth.
The King used sixty four royal ornaments which he had to wear at his consecration and at important state occasions. These ornaments were also signifiers and signified royalty. The King used fine silks. He used a silk cloth for the lower dress and shawls for head covering. It was because of the culturally built social code regarding silk and fine cotton that people understood royalty or luxurious sophistication. Coomaraswamy states that the Sinhalese cotton was of a very different quality; ‘no muslin was made, but the best stuffs were thick, soft and heavy like the finest linen’. \cite{Coomaraswamy 1984, 196}The dresses of the King were of white colour. Besides, he wore a shawl of white colour. According to tradition he used a white silk cloth to wrap the head before the coronation crown was placed by the Purohitha Brahmin. Here colour became the signifier and signified purity. Tradition and the culture give value to the colour white. The pictorial references show that the King dressed differently according to the day and the place where he should be represented.

D. The Portuguese Influenced life style: Kings became Christians and adopted the western lifestyle
Sometime later in 1557 AD Prince Dharmapala (grandson of King Buwanekabahu VII of Kotte) and his queen were baptized with the names of Dom as Dom Joao PareiraPandar (1557AD) at the hands of Joao de Villa de Conde and the queen as Dona Catherina. The Portuguese names were the fashion at court. Baptism became a rebirth under a foreign name and every female royal convert was dubbed as Dona. To denationalize the race was not the missionary’s object, and yet such was the inevitable consequence of the course he pursued, for with baptism came a rebirth under a foreign name and every royal convert was dubbed a Dom.

It is noticed that most of the early kings of the Kandyan era were educated under Portuguese Franciscans and baptized by them. King Wimaladharmasooriya 1\cite{Hulugalle 1999} (1591-1604) was one of them, son of a noble called Wirasundara Mudaliyar who was known among the Portuguese by the name of Dom Joao de Austria Mudaliyar. However from his childhood he was known as Konappu Bandara. He embraced Buddhism after he became the King of the Kandyan Kingdom, as it was an important qualification for the kingship.However his personal desires and Western attitudes could not be eliminated from his dress sense. His enthusiasm for Western culture was clearly evident through early travellers’ notes. \cite{Hulugalle 1999}

The son of King Senarath (1604-1635) (Wimaladharmasuriya’s brother) King Rajasinga11 (1635-1687) also grew up in the Portuguese
environment and his dress habits show how he changed his mind with the impact of the environment he had grown up in. Knox’s statements are quite important to understand the King’s dress habits displayed throughout his life time. Knox says, ‘he was not wont to keep to one fashion, but changes as his fancy leads him’. Furthermore careful observations of Knox state, ‘his apparel is very strange and wonderful, not after his own country fashion, or any other, being made after his own invention’. (Knox 1958)

Prince Vijayapala (a petty prince of Matale District) was also one of an interesting royal character who had completely turned into a western life style. On his coronation he dressed as an English gentleman. An eye–witness, Captain Joao Rebeiro said, ‘he was dressed in high black shoes, lined with white satin, white stockings, and a short cloak lined with white with rich buttons of gold, a round bonnet of black velvet, with buckles of the finest diamonds, and at the base of the aigrette a jewel of great value encircled by a large number of the costliest pearls, with gold lace over a vest of white tissue. Round his neck he worn an eagle set in a scallop shell, adorned and made entirely of rubies’. His long hair was curled at the ends, and his beard was worn in the Portuguese fashion, with a moustache which was not very full. (Pieris 1927) These evidences show how the early Kings of the Kandyen era eagerly embraced alien Western dress and novel items of dresses.

III. THE PROCESS OF CONTEXTUALIZING

The process of contextualizing allows people to see changes in the meanings of dresses as contexts. In everyday life it is seen that contexts are prone to dissolve into one another because people love to get dressed in a different way. By the time of conversion of the Sinhala Kings to Christianity the Portuguese introduced novel dress items to the traditional dress arena. The long sleeved upper body coat or cabaya, the long sleeved upper body short jacket or hettaya, short jacket with a broad tippet or round collar, or short jacket with a broad neckline without a collar or décolleté, trousers or pantaloons and many accessories such as buttons, hats, shoes, belts and stockings. During the Kotte era western meanings of dresses (contexts) were mixed with traditional so called Sri Lankan meanings of dresses leading to novel interpretations.

Prince Dharmapala’s Long coat + Long cloth

King Mayadunne and King Raigam Bandara’s circular neck lined short jacket + a Long cloth

King Wimaladharmasuriya’s short jacket with tippet + a Long cloth

Prince Dharmapala coroneted in Lisbon and he adopted the Portuguese long sleeved long coat instead of covering his bare upper body with an abundance of jewellery. He well manipulated such dress items like a long coat with unanounswrapped long cloth or redda for the lower body. Here the context of a long coat mediated in a totally different social environment which the contexts (meanings of dresses) already developed. However when the long coat integrated with the long unstitched wrapped cloth context was valued based on different aspects of society. Then the context becomes critical in the interpretation of appearance. It became related to social and physical construction of the body. As this is mentioned in the above successors of Prince Dharmapala followed the same dress practice. The
controversial qualities of the dresses such as stitched and unstitched dress forms mixed perfectly and its composition absolutely created a new dress language within the period.

Visual representations of the temple murals show how the Kings were immersed in Western fashions and adapted them according to their contemporary social dress norms and values. They patterned the jackets with different types of sleeves, necklines, collars, fastenings, and decorative trimmings such as frills and ornamental cuffs with traditional designs and motifs.

E. Development of New Forms of Upper Body Jackets

![Image of jackets]

**Figure 11** Gangaramaya temple, **Figure 12** Degaldoruwa temple, **Figure 13** Kandy Lewella, Kandy

**Figure 14** Hanguranketha temple, **Figure 15** Kandy

IV. CONCLUSION

The research reveals that novel fashion stimuli are basic to fashion change. A fresh or innovative style may appear inappropriate when it is first introduced, but its novelty is essential to the arousal of interest in creating new fashion styles and perceivers who seek for new trends. New fashion suggestions were received favourably from a more dissimilar source. (Leavitt and Kaigler-Evans, 1979) It seems that receivers may prefer to interact with people whom they perceive to be similar to themselves; they may be influenced more in some contexts of similar and or novel appearance because of the arousal or stimulation these appearances may provide in order to be noticed. (Kaiser 1997)

In conclusion, the concept of contextual perspective prompted the articles of clothing and new dress forms to become dress signs and created messages in one context and made it possible to move across contextual boundaries (Sri Lankan, Portuguese) because they borrowed some appearance cues (signs) across different contextual boundaries.

These concepts are derived from the scientific basis would be recommended for application of different avenues of the field of fashion. Therefore the applicability of fashion meanings of Kotte period to the present as well as to the future is possible. The knowledge gained from the study can be applied to the fields of fashion, identified as fashion advertising, fashion photography and fashion journalism. Contemporary society is valued on a pecuniary culture. In this culture dress and fashion becomes highest demanding consumer consumption product.


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Note: The title rajiraja which came into vogue in the island during the 12th century was applied to Parakramabahu VI. In the case of Parakramabahu VI the assumption of this epithet by him may have been inspired by the revival of the power and influence of the Sinhalese monarchy under him after a long period of decline. He brought ‘the whole island under one umbrella’ during his long eventful reign and this was considered to be a remarkable achievement. To his subjects the assumption of this epithet by Parakramabahu VI may have implied his over lordship over the kingdom and principalities which existed in the Island at that time. The more prestigious Maharadhiraja was commonly used in much of the Kotte period.
Trucking Industry Perceptions of Congestion Problems and Potential Solutions to Container Transportation in Sri Lanka

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Abstract— Inland Container transportation is coordinated and interacted between port terminals, Container Freight Stations, exporters, consignees, clearing agents, freight forwarders and primarily container transport companies. The key objectives of the study were to reveal the perception of container transportation industrialists with respect to road congestion problems in Sri Lanka; and propose recommendations to improve the intermodal freight transportation. Therefore the factors that make an impact on road congestion namely, Road; Timing; Human; Vehicle; and Weather were examined.

It was revealed from the study that the congestion experienced by trucking companies is considerable thus congestion mitigation measures are needed especially in the urban areas. Better coordinating of traffic Signals and implementing effective system to attend emergency crews in clearing accidents should be implemented. Visibility in the system with respect to customs and other border management agencies in order to install electronic clearance stations at international border crossings would be essential. Further research on dedicating a single lane to truck traffic, having truck-only lanes on some surface streets; truck-only streets for access to ports, rail terminals, and airports; Eliminating some on-street parking during certain periods would be necessary prior implementation.

Keywords: Congestion, Containers, Transport, Trucking, Intermodal, Freight

I. INTRODUCTION

Efficient maritime transportation is heavily dependent on the smooth operation of land transportation. Swift modal transfers are key to successful inland operations. This paper focuses on inland Container Transportation that are coordinated and interacted between port terminals, Container Freight Stations, exporters, consignees, clearing agents, freight forwarders and primarily container transport companies. The Government of Sri Lanka (GoSL) has embarked on a development agenda with the objective of converting the country to a Naval, Aviation, Commercial, Energy and Knowledge hub in Asia. Commercial Hub Regulation of Sri Lanka and the Free-Port Concept proposes the declaration of Colombo and Hambantota ports and Mattalla Air Port as Free ports; declaration of Katunayake Exports Processing Zone (KEPZ) and Koggala EPZ as Bonded areas for the purpose of the Hub operation; and Mattalla air port and Mirijjawila EPZ will be declared as Bonded areas.

According to new developments that are based on the Commercial Hub Regulation No. 1 of 2013 a new enterprise which is engaged in business activities referred to Commercial Hub Regulation be subject to a synchronized operational procedure/s that shall be introduced by the Department of Customs, the Board of Investment of Sri Lanka and Sri Lanka Ports Authority in respect of or Free Port or the Bonded Area. (GoSL, 2013).

Accordingly, the inland transportation of containers needs to be very efficient and effective to face the future demand. Infrastructure is the necessary condition for efficient cargo handling operations and adequate infrastructure is needed to avoid congestion (Acciaro & McKinnon, 2013). Ports will have to come up with viable alternatives to reduce the impact of congestion and relieve local communities from the negative externalities generated by increasing cargo flows. (Acciaro & McKinnon, 2013). As consequent to containerization more trucking companies commnected operations increasing heavy and long vehicles on roads. As traffic volumes increase the congestion grows on highways and urban roadways.

Traffic Congestion particularly in and around ports is a serious problem for trucking companies and comes at a high cost. Traffic congestions in
metropolitan areas have developed to a major problem in many countries (Kathawala & Tueck, 2008) and is increasing including environmental degradation (Jacyna, 2013). The common complaint by the trucking transporting companies in Sri Lanka is the additional cost they incur on delays due to road congestion. Sri Lanka incurs a huge economic loss of around Rs. 40 billion annually due to road traffic congestion and air pollution with too many vehicles on a limited road network (Sirimanna, 2013). The timely actions in developing roads should be highly commended because this situation would have been even worse if such critical decisions were not taken in the recent past. Sri Lanka has made heavy emphasis on improving infrastructure to facilitate the hub concept. Country even now serves as an effective hub for maritime goods transport. (Edirisinghe & Jayathilake, 2014) However, equally the density of vehicles too has increased over the years in response to country’s development activities. Given the fact that country is determined to capitalize its geographical advantage to make the country the most preferred hub in Asia it is important to study the performance of trucking industry which could create a heavy impact in this aspect. There is encouraging progress made with respect to the road network in Sri Lanka in the recent past. The Quality of roads has improved from 55 out of 139 countries in 2012 to 49 out of 148 in 2014. (WEF, 2012-1014).Therefore it is imperative that the said improvement should be effectively managed to ease the road congestion that appears to be making a negative impact to the final outcome of improving mobility. Accordingly, the objectives of the research are as follows.

(i) Reveal the perception of container transportation industrialists with respect to road Congestion problems

(ii) Propose recommendations to improve the intermodal freight transportation

II. LITERATURE REVIEW

On road traffic congestion is a growing problem for trucking companies operating in urban areas. (Golob & Regan, 2003). Congestion costs to businesses go beyond the mere vehicle and driver costs of delay. (WHO, 2011) The other issue is that delivery service operators become increasingly challenged to maintain dependable and reliable schedules. Those who depend on road transport affected by the degree of unpredictability and variation in delays associated with growing congestion (Weisbrod & Fitzroy, 2011) As a consequence the various techniques in supply chain management such as JIT- Just in Time fail miserably. WHO (2011) identifies four type of various costs such as increased inventory costs, logistics costs, and last-minute processing costs, and reliability costs would be added as a result of congestion. Growth of traffic congestion adds to total transport costs for delivered products, causing firms to shift location and shipment size configurations to re optimize net revenues. (Weisbrod & Fitzroy, 2011).

As cited in Islam & Olsen, (2014) truck transportation has received much greater attention in recent times because of the continuous growth occurring in the containerized trade, the introduction of bigger ships and the rising level of port competitiveness (Moura et al., 2002; Lannone, 2012). Road transportation plays a vital role in the multimodal transport system. In the present context in Sri Lanka goods movement is heavily performed by means of inter-modal containers. Inter-modal transportation is a specific type of multi-modal transportation (Marchet, et al., 2012). Traffic congestion is a serious recurring problem to any citizen in most of all courtiers. Congestion impacts on supply chain flows created a risk for maintaining regional competitiveness in a global economy (Weisbrod & Fitzroy, 2011).

Traffic volumes and congestion affects supply chains and truck-dependent businesses both of which are of increasing importance for both public policy and private sector operators (Weisbrod & Fitzroy, 2011) this is a problem in most cities around the world, especially in developing regions. A large number of Sri Lankans spend more time on the roads, paying more for fuel, as the number of vehicles on the roads is rapidly increasing and it takes longer to reach one’s destination. (Sirimanna, 2013). Effective traffic incident management is a fundamental factor in road safety and congestion control, decreasing the occurrence of secondary incidents at scenes and minimizing the impact of resultant traffic congestion and emissions.
Cattermole, et al., 2013) The container trucking industry characterized by a thin profit margin and cut-throat competition poses additional challenges for minority owned trucking firms (Min, 2013). The quality of logistics services trucking forwarding and customs brokerage is also central to the trade efficiency, (Edirisinghe & Muller, 2014). Just in time and lean manufacturing create a major demand for the transportation industry for reliable and timely pick-up, delivery, and high level of flexibility (Deshpande, et al., 2007). Decisions regarding location, scheduling, and deployment of vehicles and labor resources can also contribute to congestion or be used to minimize the effects of rising traffic congestion (Weisbrod & Fitzroy, 2011). As volumes increase, alternative modes of transport, such as rail or short-sea shipping are being promoted both to reduce both congestion and environmental impacts. (Acciaro & Mckinnon, 2013). The economic role of freight movement and its sensitivity to rising traffic congestion is a matter of concern.

Weisbrod & Fitzroy, (2011) suggests two types of delays namely, (1) recurring daily traffic delay and (2) non-recurring traffic delay. The former occurs as vehicle speeds are reduced and vehicle queues are increased due to a high volume/capacity ratio on specific corridors at specific times, while the latter refers to delays when there are incidents such as collisions, medical emergencies and vehicle breakdowns. It was revealed during the interviews with industry experts that various internal and external factors may influence congestion on roads including Road conditions or other related factors; the timing of the day; Human factors such as the status of drivers; Vehicle related factors that may cause frequent breakdowns; and also unfavourable weather conditions.

III. METHODOLOGY

There are 102 major trucking companies registered as members of Association of Container Transporters Sri Lanka (Incorporated) and operated in the country and they are essentially based in and around Colombo city where the container port is located. They provide services to all customers in the island including Hambantota port. The survey was conducted as a questionnaire survey and unstructured interviews. Questionnaires were distributed among the operations manager in charge in the respective 102 trucking companies. Responses from 61 respondents were obtained which reflects a response rate of 59.80%. Statistical analysis was done using the EViews software. The study also considered the past data and future projections of Ports in Sri Lanka. Depth interviews have been conducted with two members of each Trade Associations such as Association of Inland Container Depot Operators, Ceylon Association of Ships Agents, Sri Lanka Association of Vessel Owners, Sri Lanka Shippers Council, Ceylon Chamber of Commerce, Department of Inland Revenue, Customs and Board of Investment of Sri Lanka.

IV. DATA ANALYSIS AND FINDINGS

This statistics shows that the congestion is inevitable as vehicles keep on adding to the daily traffic movement on the roads. It was also noted that 1,279,616 vehicles have been issued with valid revenue licences in 2012 in the Western province where Colombo city is located. This figure reflects 38 percent out of the total vehicles of 3,374,479 running in the country in all nine provinces.
Therefore it is evident that roads in and around Colombo city is continue to be getting congested. Figure 1 explains the growth in container movement with respect to domestic imports and exports including empty containers.

Figure 1: The growth in container movement with respect to domestic imports and exports including empty containers.

Source: (CASA Per. Review, 2004-2012)

This information is vital because every domestic container contributes to the traffic movement on road network. For example an import container needs to be transported from port to the consignee’s warehouse that usually involves two trips. (I.e. empty trailer from trucking company to the port and return trip with import container to the consignee’s warehouse. Similarly exporters need to collect empty containers from designated container yards and transport to manufactures warehouse and later deliver it to the port after stuffing of cargo.)

Out of 61 respondents 59 respondents (97%) were engaged in both pickups and deliveries at port for intermodal operations. According to the study 79 percent of respondents view that traffic congestion as a critically serious problem in intermodal transportation. Figure 2 shows that maritime intermodal carriers are more likely to miss schedules because of traffic congestion. All the respondents at least some times missed the schedule due to congestion.

46 participants have missed schedules either often or very often while 15 have some time missed the schedule due to traffic congestion. Therefore another finding is that every respondent have missed their schedule due to congestion.

A. Road Related Issues

There were 36 and 19 respondents who believed that delays ‘sometimes’ and ‘often’ occur due to accidents on roads respectively. Only 6 respondents said that delays occur very Often due to accidents. Similarly 36 respondents have re-routed drivers because of traffic congestion some times while 10 responded often re-routed drivers because of traffic congestion while 7 respondents re-routed drivers very often.

Perceptions of tracking industry whether delays are caused due to waiting time at traffic signals on roads revealed that only 3 respondents never had this experience. However, 19 respondents felt that delays are sometimes caused due to waiting time at traffic signals on roads while 31 responded as it happened often. 8 respondents said that delays are caused very often due to this. Delays are caused very often due to narrow road according to 11 respondents while 26 respondents felt it happened often. 18 respondents and 6 have said that delays are caused sometimes or never respectively due to narrow roads.

There were 31 respondents who perceived that delays are often caused due to truck driving restricted to left lane on roads while 15 said very often.12 responded that delays are sometimes caused due to truck driving restricted to left lane on roads while only 3 responded negatively. There were 13, 31, and 8 respondents said that delays are caused due to breaking of road traffic rules some times, often and very often respectively while 9
respondents believed that delays are not caused due to breaking of road traffic rules by drivers.

With respect to whether delays occur due to Construction work on roads, no one responded negatively. 31 respondents (51%) said it occurs sometimes. 6 responded often and 24 said that delays occur very often due to Construction work on roads.

There were seven road related causes the congestion has been identified in the survey. It was noted that all seven causes have some kind of contribution to the congestion according to the responses as explained in the above analysis.

Four main and sensitive routes/areas namely, Colombo-Negombo road; Colombo-Kandy road; passage Between Colombo-Kandana; and Area within Colombo city limits have been chosen to study the density of congestion in each designated area and how the trucking industry contrast and perceives them.

<table>
<thead>
<tr>
<th>Route</th>
<th>Never</th>
<th>Some Times</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombo-Negombo road</td>
<td>3</td>
<td>15</td>
<td>36</td>
<td>10</td>
</tr>
<tr>
<td>Colombo-Kandy road</td>
<td>7</td>
<td>19</td>
<td>35</td>
<td>7</td>
</tr>
<tr>
<td>Between Colombo-Kandana</td>
<td>6</td>
<td>6</td>
<td>50</td>
<td>5</td>
</tr>
<tr>
<td>Within Colombo city limits</td>
<td>3</td>
<td>7</td>
<td>42</td>
<td>9</td>
</tr>
</tbody>
</table>

It was revealed that traffic congestion often experienced in all selected routes/areas.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>95% Confidence Interval for Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombo-Negombo Road</td>
<td>1.9180</td>
<td>1.7541-2.0820</td>
</tr>
<tr>
<td>Colombo-Kandy Road</td>
<td>1.8033</td>
<td>1.6425-1.9640</td>
</tr>
<tr>
<td>Between Colombo-Kandana</td>
<td>1.9836</td>
<td>1.8740-2.0932</td>
</tr>
<tr>
<td>Within Colombo City Limits</td>
<td>1.9344</td>
<td>1.7603-2.1086</td>
</tr>
</tbody>
</table>

It is plainly visible from table 2 that there is no statistical significance in the observations under four key areas as the Confidence Interval for mean is overlapping. Accordingly it can be concluded that these key areas/roads are often congested.

B. Time Related Issues
Respondents were asked the time duration that most traffic congestion is occurred on roads in Sri Lanka in general. The responses are provided in table 3.

<table>
<thead>
<tr>
<th>Time slot</th>
<th>Never</th>
<th>Some Times</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 am – 12 noon</td>
<td>3</td>
<td>12</td>
<td>31</td>
<td>15</td>
</tr>
<tr>
<td>12 noon- 6 pm</td>
<td>7</td>
<td>13</td>
<td>26</td>
<td>15</td>
</tr>
<tr>
<td>6 pm – 12 midnight</td>
<td>3</td>
<td>10</td>
<td>31</td>
<td>17</td>
</tr>
<tr>
<td>12 midnight- 6 am</td>
<td>47</td>
<td>11</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

There is a statistical significance in the observations in table 4. Accordingly, it can be concluded that congestion occurs often or very often during three time slots except 12 midnight- 6 am.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>95% Confidence Interval for Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 am – 12 noon</td>
<td>1.951</td>
<td>1.7447-2.1569</td>
</tr>
<tr>
<td>12 noon- 6 pm</td>
<td>1.803</td>
<td>1.5611-2.0454</td>
</tr>
<tr>
<td>6 pm – 12 midnight</td>
<td>2.016</td>
<td>1.8100-2.2228</td>
</tr>
<tr>
<td>12 midnight- 6 am</td>
<td>0.2787</td>
<td>0.1373-0.41999</td>
</tr>
</tbody>
</table>

There were 25 respondents who said they never wait for less congested times to arrange pickup and delivery to their customers while 22 wait some times. Only 3 respondents wait very often for less congested times to arrange pickup and delivery and 11 respondents wait for less congested times often. According to this finding it is clear that customers of trucking companies were compelled to compromise to some extent as the trucking companies have a practice of waiting for less congested times to arrange pickup and delivery to their customers. This may not be a healthy situation unless the trucking companies do this with the consent of their customers.

C. Human Related (HR) Issues
With respect to human related issues 28 respondents said that congestion sometimes occurred due to drivers’ inefficiency while it occurs
very often for 13 respondents. 15 said congestion often occurred due to drivers’ inefficiency while only 5 were negative.

Figure 4: Impact of HR related issues
Source: Survey data (2014)
According to 25 respondents congestion sometimes occurred due to drivers need to take a rest and park vehicles on roads. No one responded that they faced this often and very often respectively. Therefore it was found that there is a moderate impact on the issues associated with respective drivers of trucking companies.

D. Vehicle Related Issues

Figure 5: Impact of vehicle breakdown
Source: Survey data (2014)
36 respondents felt congestion was sometime occurred due to vehicle breakdown while only 2 were negative. 16 and 7 respondents said congestion occurred often and very often due to vehicle breakdown respectively. This factor creates a big impact on road congestion and unpredictable too. It was revealed by some respondents that all the major variation of travel time to regular destination had some relevance to a vehicle breakdown.

E. Issues Relevant to Weather
General perception of trucking companies is that rainy weather may cause congestion and 42 respondents said delays were sometimes occurred due to rain and floods while only one responded negatively. 10 and 8 responded said that they faced the issue often and very often respectively. However, this is a natural phenomenon which is something beyond control. Trucking companies most of the time operates on strict and tight time schedules particularly with respect to export consignments. Therefore it is usually impossible to avoid times that potentially cause congestion even if accurate weather forecasts have been announced.

F. Evaluation of Effectiveness of Recommended Congestion Mitigation Proposals
The respondents were asked about their perception towards nine potential congestion mitigation proposals recommended by the researchers. The proposals were based on the comments made by respondents at the interviews with industry experts mentioned previously.

Perception of the industrialists on proposed solutions were measured using five point likert scale from 1= Strongly disagree to 5= Strongly agree. Total value of the response measured by the likert scale then weighted and arranged according to the descending order. Results are shown in table 5.

Table 5: Weightings of the perceptions of trucking companies towards proposed solutions

<table>
<thead>
<tr>
<th>Solutions</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Dedicating a single lane to truck traffic wherever possible</td>
<td>0.1324536</td>
</tr>
<tr>
<td>2 Having truck-only streets for access to ports</td>
<td>0.1304985</td>
</tr>
<tr>
<td>3 Better coordinating of traffic signals</td>
<td>0.1256109</td>
</tr>
<tr>
<td>4 Having an effective system to attend emergency crews in clearing accidents</td>
<td>0.1182796</td>
</tr>
<tr>
<td>5 Adding more expressways wherever possible</td>
<td>0.1158358</td>
</tr>
<tr>
<td>6 Eliminating some on-street parking during certain periods</td>
<td>0.115347</td>
</tr>
<tr>
<td>7 Installing electronic clearance stations at international border crossings</td>
<td>0.1124145</td>
</tr>
<tr>
<td>8 Having truck-only lanes on some surface streets</td>
<td>0.1055718</td>
</tr>
<tr>
<td>9 Imposing a toll on all vehicles travelling during rush hours</td>
<td>0.0439883</td>
</tr>
</tbody>
</table>

Source: survey data (2014)
According to the analysis allocating a dedicated single lane to truck traffic is the most preferred solution perceived by the industry. Having truck-only streets for access to ports was the second most preferred option followed by better coordinating of traffic Signals. It was then proposed by the industry to have an effective system to attend emergency crews in clearing accidents. There are two expressways in operation in Sri Lanka as at 2014. The trucking industry feels that adding more expressways wherever possible could be a solution to mitigate the congestion problem. Eliminating some on-street parking during certain periods was the next option followed by installing electronic clearance stations at international border crossings and having truck-only lanes on some surface streets. Imposing a toll on all vehicles travelling during rush hours was perceived by the industry as the last option in mitigating congestion problems on roads.

V. CONCLUSIONS

Congestion experienced by trucking companies is considerable as 79 percent of respondents view that traffic congestion as a critically serious problem in intermodal transportation. The continued growth of traffic and the rapid improvements owing to implementation of the commercial hub concept may create serious road congestion in future particularly in urban areas. As a consequence the maritime intermodal carriers are more likely to miss schedules because of traffic congestion. Therefore, congestion mitigation measures should be adopted especially in the urban areas at this time to face future challenges successfully.

Road related actions that need policy decision should be seriously considered.

The study had considered five key variables that may cause congestion. This includes road, time, and weather related issues as external factors while HR and vehicle issues represent internal factors of trucking companies. The trucking industry perceives that the congestion occurs often or very often during 6am-12 midnight while 12 midnight- 6 am is free from traffic congestion. It was revealed that traffic congestion often experienced in Colombo-Negombo road; Colombo-Kandy road; passage Between Colombo-Kandana; and Area within Colombo city limits. Based on industry perception Colombo-Negombo Road particularly the distance Between Colombo- Kandana should be improved and eliminated the congestion. Similarly Colombo-Kandy Road and all key roads leading to Port of Colombo should be given priority for improvements.

The actions with respect to development of road infrastructure are already making positive contribution to the country’s logistics performance. Therefore, adding more expressways wherever possible should be looked into. Further research should be carried out prior to taking any policy decisions with regard to certain sensitive proposals. This includes, 1) dedicating a single lane to truck traffic; 2) designating truck-only lanes on some surface streets; 3) truck-only streets for access to ports, rail terminals, and airports; 4) Eliminating some on-street parking during certain periods. It would be necessary to implement a system for better coordinating of traffic Signals and an effective system to attend emergency crews in clearing accidents should be done.

Commercial Hub Regulation in Sri Lanka is subject to a synchronized operational procedure/s that shall be introduced by the Department of Customs, the Board of Investment of Sri Lanka and Sri Lanka Ports Authority. Therefore it would be necessary to have more visibility in the logistics system with respect to activities and process of customs and other border management agencies in order to install electronic clearance stations at international border crossings. Further improvements in maritime intermodal operations may require creative public/private sector collaboration and would help for “sustainable” growth of country’s logistics performance. Increased use and reliability of Container Status Inquiry systems (CSIS) that supply carriers with information about movement of trucks would be beneficial from the trucking companies’ point of view.

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2 JIN Zhi-hong received his B.E. and M.E. from Northeastern University (China) in 1984 and 1987 respectively, and his Ph.D. from Nagoya Institute of Technology (Japan) in 2000. He was an assistant professor from 1987 to 1993 at Northeastern University in China, from 2000 to 2003 at Nagoya Institute of Technology in Japan. Since 2003 he has been a Professor at Dalian Maritime University (DMU) and dean of College of Transportation Management of DMU. His current research interests focus on logistics systemic optimization, scheduling, and combinatorial optimization.
Abstract—Air transportation plays a significant role in nations’ economy providing expeditious links to the international markets. Globalization and advanced technological applications have squeezed the entire world, where by aviation industry further diminishes the existing gap by physically linking two locations. It is an all-time true that aviation provides the speediest, most convenient and efficient travel, with comparatively highest cost of all five modes. But it is evidenced by the transport statistics that, the demand for air transport is been increasing yearly, even though the cost is a problematic component. Since it is observed that, examining the determinants of air transport demand would be prudent and an effective effort in policy implementations as well as in forecasting which would be an essential requirement in corporate planning process.

The objective of this research is to determine the factors affecting air passenger travel demand in Sri Lanka and was conducted based on Bandaranaike International Airport (BIA). The focus of the research was on Air Passenger demand at BIA and not the Air Freight. Macroeconomic factors have been considered as explanatory variables. Three dependent variables as Air Passenger Arrivals, Departures and Total Movement of air passengers have been taken into consideration.

In analyzing the data set, univariate descriptive analysis has been carried out and hypothesis testing has been done using Pearson correlation coefficient. In doing advanced statistical modelling, three models have been fitted for total air passenger volume, arrivals and departures separately. In the process of constructing multiple linear regression model Forward Selection Method has been used.

According to the empirical findings it is proved that only five out of fourteen specified independent variables, namely Tax Revenue, Average Exchange Rate, Tourists Arrivals, Interest Rate and FDI have a significant relationship with Total Air Passenger Movements, Air Passenger Arrivals and Air Passenger Departures and for only Air Passenger Arrivals, Government debt has become a significant factor.

Keywords—Air transportation, regression analysis, Bandaranaike International Airport

I. INTRODUCTION

The strategic geographical location of Sri Lanka in the Indian Ocean accredited it the eternal benefit of serving as one of the most important aviation hub, being close proximity to populous nations in the world. Aviation industry is reaching its prosperous stages with the booming of tourism industry after three decades of conflict period. Hence the industry focuses not only on facilitating transfer passengers but also transit passengers.

Sri Lanka aviation industry experienced an exceptional growth during last couple of years, which encompasses developing and upgrading Bandaranaike International Airport and encouraging sea plane and domestic air plane services. BIA witnessed the highest passenger numbers ever in 2012 (before Mattala Rajapaksa International Airport (MRIA) came into operation), recording an increase of 7% compared to the previous year. BIA modernization programme expects to increase its passenger handling capacity significantly in future. It is expected to double the current passenger numbers to 12 million passengers per annum, under phase II of BIA expansion project.

Continuous focus on airport infrastructure developments contributes to stimulate more foreign investments to the country. Sri Lankan
Airlines, the national carrier has expanded their fleet to cater the amplified demand from outbound and inbound passenger traffic to and from Sri Lanka. The capacity of the national carrier is expected to expand in years to come.

The low cost carriers, who entered the market recently, have induced more people to travel, offering cost efficient deals, where many airlines have to compete with them on attracting customers. This depicts a positive sign since this competition could lead to a better market place with more options available for the customer to choose from.

Nevertheless, fuelled by government long term development projects apart from afore mentioned, construction of new International airport in Mattala, development and modernization of fourteen domestic airports for internal aviation paves the way to generate more employment opportunities in aviation sector contributing national economies. Even MRIA will fulfil a long standing need of having a second international airport eliminating the disadvantage the country had by operating with a single international airport. MRIA will be a greater contributor to the country’s economy enabling international trade, travel and tourism, vocational training and employment and intended to integrate with Port of Hambantota to support sea-air cargo transhipments.

Since it is in its early stages of operation, records on passenger movements or related figures are not readily available at the moment. However it is a proven fact that both these international airports are priceless gifts to Sri Lanka on its strategic grounds which can amplify the economic growth of the country.

The main focus of the study is to analyze the factors that affect Air Passenger demand at BIA and to identify the most significant factors that have a direct impact on the above. Macroeconomic factors have been considered as explanatory variables. Three dependent variables as Air Passenger Arrivals, Departures and Total Movement of air passengers consider under the study and are to be tested against fourteen explanatory variables to see the relationship those three dependent variables are having with each of the explanatory variable.

II. LITERATURE REVIEW

Demirsoy (2012) conducted his research on two major objectives as to investigate on the impact of different factors on air passenger demand for Turkish Air Transportation and to do a maturity analysis of the domestic Turkish air transport market. (Research explains whether Turkish domestic air transport is likely to face maturity soon) The research was lead on the basis of four questions as to, “What are the main drivers of domestic air transport demand in Turkey?”, “Can economic growth or income rises in the country in the country serve as a partial explanation of air transport demand growth?”, “Are there any other qualitative factors that are affecting passenger demand?” and “How are deregulations influencing the domestic market?”.

The researcher carried out a comprehensive regression analysis to determine the most influencing factors to Air Passenger demand where the dependent and independent variables in the regression model were based on the theoretical and empirical literature.

Income, Population, Consumption, Expenditure, Rail-Road Passenger Numbers, High-Speed Rail-Road Passenger Numbers, Crude oil prices and several dummies have been taken as relevant independent variables and had created a preliminary model as;

\[ Pax = f(I,P,C,E,R,HS,O,dummies) \] (1)

Where - Pax=Passenger Number/ I-income/ P-Population/ C-Consumption/ E-Expenditure/ R-Rail passenger Number/ HS- High Speed rail passenger number/ O-Oil Prices(units of the oil price)

The study of Abdullah et al (2000) describes Domestic air travel in the Kingdom of Saudi Arabia followed by a discussion of the determinants of air travel demand in the country. An attempt was made to develop several models of demand for domestic air travel in the kingdom with different combinations of variables using stepwise regression technique.

Selection of dependent and independent variables in the study were based on theoretical and empirical literature. Oil Gross Domestic Product, Private Non-Oil Gross Domestic Product, Government Non-Oil Gross Domestic Product, Total
Oil Gross Domestic Product, Total Gross Domestic Product, Consumer Price Index, Per Capita Income, Import of Goods and Services, Exchange Rate, Population Size, Total Expenditures, Private Consumption Expenditures, Government Consumption Expenditures, Total Consumption Expenditures and Yield were the basic economic and demographic factors.

As expressed by the author, the most important step in an attempt to study the relationship between variables is to express this relationship in mathematical form, that is formulate and specify the model with which the economic phenomenon can be explored empirically. To eliminate the problem of multicollinearity, test of correlation has been conducted and only Total Non-Oil Gross Domestic Product($X_4$), Consumer Price Index($X_6$), Import of Goods and Services($X_8$), Per Capita Income($X_7$), Population Size($X_11$), Total Expenditures($X_{12}$) and Total Consumption Expenditures($X_{15}$) were considered as relevant factors to the demand for domestic air travel in the Kingdom of Saudi Arabia.

Authors used four different specifications of the model to see forecasts performance of each model.

Group I: ($X_4$, $X_6$, $X_8$, $X_{11}$)
Group II:($X_7$, $X_6$, $X_8$)
Group III:($X_{12}$, $X_6$, $X_{11}$)
Group IV:($X_{15}$, $X_6$, $X_{11}$)

A sequence of regression equations were calculated using different combinations of variables in the group through stepwise regression procedure for selecting independent variables. Each step, an independent variable was either added or removed until the prediction of the dependent variable( $Y$) does not improve significantly.

The model, which has the total expenditure and the size of the population as the explanatory variables, was the model to represent the demand for domestic air travel in Saudi Arabia more precisely. The model explains that population growth and expenditures lead to increased domestic and international demand for air transport.

The rest of the models examined suffer from multicollinearity

\[ Y = -2.961205 + 0.027701 X_{12} + 0.368102 X_{11} \]

Where $Y$ : Number of passengers in millions

$X_{11}$: Population Size in millions

$X_{12}$: Total Expenditures in billions

However, the model they built has several deficiencies. Despite the fact that they considered different models, they were not trying to create a model with more explanatory variables.

Another Study conducted by Poore (1993) whereby he conducted a hypothesis testing and forecasted the future demand for air transportation by air plane manufactures and aviation regulators, was reasonable and represented an implicit trend in actual experience. The tests compared forecasts issued by Airbus Industry, Boeing and International Civil Aviation Organization (ICAO) with actual data and results with the actual results of a basic model of demand Revenue passenger kilometres (RPK). The model was a combination of two equations describing RPK requires by high and low income groups respectively. Changes in Income Per Capita were found to be highly correlated to the Variations in RPKs demanded by the high-income groups. Changes in RPKs demanded by low-income groups were related to changes in population size. The model was consistent with the assumptions and conditions appropriate for regression analysis.

III. METHODOLOGY

This research is based on a comprehensive data set collected through secondary data sources and secondary data has been used over primary data since those data are readily available where it is easy to obtain and are cheaper and those may obtainable even when the primary data cannot be obtained at all. The main data sources will be Annual Reports of Airport and Aviation Sri Lanka Pvt. Ltd, Publications of Central Bank of Sri Lanka, Board of Investment and Department of Census and Statistics, Sri Lanka, Sri Lanka Tourists Board, International Air Transport Association and International Civil Aviation Organization.

In analyzing this data set, uni-variate descriptive analysis has been carried out. Hypothesis testing has been carried out using Pearson correlation coefficient as all independent and dependant variable are continuous. In doing advanced statistical modelling, three models have been fitted
for total air passenger volume, arrivals and departures separately.

In doing regression modelling variables has been selected with respect to the significance that they have shown in hypothesis testing. Forward selection method has been used in modelling.

**IV. ANALYSIS AND INTERPRETATION**

Total Air Passenger Movements ($Y_1$), Total Air Passenger Arrivals ($Y_2$) and Total Air Passenger Departures ($Y_3$) over the period of 1976 – 2012 are represented in the Figure 1.

![Figure 1: Trend Line for Air Passenger movements at BIA (1976 – 2012)](image)

*Data source: Airport and Aviation Sri Lanka Pvt.Ltd*

The above figure shows that there exists almost a positive trend over the period, during which the study has been taken into consideration. Apart from few significant drops, it is clear that the Passenger Movement at BIA is being increased steadily in each year. The drop in year 1979 was caused due to the bankruptcy of airlines, which were closed down by the Government of J.R Jayawardene. The next perceptible drop in the year 2001, was due to a suicide attack at BIA by The Liberation Tigers of Tamil Eelam (LTTE) during the war period. In the year 2009 the drop in Air Passenger movement was due to the global economic crisis and climaxing war situation of the country.

However the drastic drop in the year 2009 was recovered in consecutive years in the number of air passenger movements. The National Aviation sector has recorded an impressive growth in 2011 as shown in the above figure. The Bandaranaike International Airport (BIA) handled 6.1 million passengers including transit passengers during the course of the year, recording an increase of 17% compared to the previous year (2010). It is also noticeable in the above figure that both the Number of Passenger Arrivals and Departures shows a same behaviour during the period of study.

Continuing impressive post-war performance of Sri Lanka’s economy, despite the global economic downturn that is being fuelled by serious financial meltdown in Europe, a slow recovery in United States and slow economic growth in regional giants, China and India, has contributed largely to the significant growth in Air Passenger Demand in last couple of years. Especially with the end of civil war Sri Lanka Tourism has boomed to a new milestone of 1,005,605 arrivals in 2012, which is an all-time high figure in the history of the country. The reason behind the massive increase in Air Passenger Movements in year 2012 would be resulting from that.

According to the statistical results obtained for Measure of Central Tendency and Variability, on average the Total Air Passenger Movements at BIA has been approximately $2.43 \times 10^6$ with a standard deviation of $1.778 \times 10^5$ number of passengers.

<table>
<thead>
<tr>
<th>i&lt;sup&gt;th&lt;/sup&gt; variable</th>
<th>Correlation Coefficient</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inflation Rate (CCPI %)</td>
<td>-.118**</td>
<td>.485</td>
</tr>
<tr>
<td>2. Per capita GDP (US$)</td>
<td>-.367*</td>
<td>.026</td>
</tr>
<tr>
<td>3. Interest rate (%)</td>
<td>.425*</td>
<td>.009</td>
</tr>
<tr>
<td>4. Total Migration for Employment</td>
<td>.869**</td>
<td>.000</td>
</tr>
<tr>
<td>5. Fuel Price</td>
<td>.878**</td>
<td>.000</td>
</tr>
<tr>
<td>6. Unemployment rate (%)</td>
<td>-.905**</td>
<td>.000</td>
</tr>
<tr>
<td>7. Population ('000)</td>
<td>.906**</td>
<td>.000</td>
</tr>
<tr>
<td>8. Tourists Arrivals</td>
<td>.911**</td>
<td>.000</td>
</tr>
<tr>
<td>9. FDI(US$ mn)</td>
<td>.921**</td>
<td>.000</td>
</tr>
<tr>
<td>10. Avg. exchange rate (Rs. Per US$)</td>
<td>.945**</td>
<td>.000</td>
</tr>
<tr>
<td>11. Gov. Expenditure (US$ mn)</td>
<td>.947**</td>
<td>.000</td>
</tr>
<tr>
<td>12. GDP (US$ mn)</td>
<td>.953**</td>
<td>.000</td>
</tr>
<tr>
<td>13. Tax Revenue (US$ mn)</td>
<td>.957**</td>
<td>.000</td>
</tr>
<tr>
<td>14. Government Debt(US$ mn)</td>
<td>.968**</td>
<td>.000</td>
</tr>
</tbody>
</table>
Below hypotheses has been checked;

Ho: Total air passenger movements is independent from the $i^{th}$ variable
H1: total air passenger movements is depending on the $i^{th}$ variable

Since it can be concluded that, all explanatory variables except Inflation Rate, are highly correlated with Total Air Passenger Movements and is independent from the interest rate. Pearson Correlation Coefficient between Total Air Passenger Movement and Inflation Rate, Per Capita GDP and Unemployment Rate are negatively correlated whilst the other variables show a positive correlation.

Table 2. Results of Hypothesis testing for air passenger arrivals

<table>
<thead>
<tr>
<th>$j^{th}$ variable</th>
<th>Correlation Coefficient</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inflation Rate (CCPI %)</td>
<td>-.118</td>
<td>.487</td>
</tr>
<tr>
<td>2. Per capita GDP (US$)</td>
<td>-.367*</td>
<td>.025</td>
</tr>
<tr>
<td>3. Interest rate (%)</td>
<td>.421**</td>
<td>.010</td>
</tr>
<tr>
<td>4. Total Migration for Employment</td>
<td>.870**</td>
<td>.000</td>
</tr>
<tr>
<td>5. Fuel Price</td>
<td>.879**</td>
<td>.000</td>
</tr>
<tr>
<td>6. Population ('000)</td>
<td>.906</td>
<td>.000</td>
</tr>
<tr>
<td>7. Unemployment rate (%)</td>
<td>-.907**</td>
<td>.000</td>
</tr>
<tr>
<td>8. Tourists Arrivals</td>
<td>.908**</td>
<td>.000</td>
</tr>
<tr>
<td>9. FDI(US$ mn)</td>
<td>.923**</td>
<td>.000</td>
</tr>
<tr>
<td>10. Avg. exchange rate (Rs. Per US$)</td>
<td>.946**</td>
<td>.000</td>
</tr>
<tr>
<td>11. Gov. Expenditure (US$ mn)</td>
<td>.948**</td>
<td>.000</td>
</tr>
<tr>
<td>12. GDP (US$ mn)</td>
<td>.954**</td>
<td>.000</td>
</tr>
<tr>
<td>13. Tax Revenue (US$ mn)</td>
<td>.958**</td>
<td>.000</td>
</tr>
<tr>
<td>14. Government Debt(US$ mn)</td>
<td>.969**</td>
<td>.000</td>
</tr>
</tbody>
</table>

Below hypotheses has been checked;

Ho: Air passenger departures is independent from the $k^{th}$ variable
H1: Air passenger departures is depending on the $k^{th}$ variable

It can be concluded that Air Passenger Departures is independent from Inflation Rate. Except Unemployment Rate and Per Capita GDP, all the other explanatory variables show a positive correlation with Air Passenger Departures.

Table 3. Results of Hypothesis testing for air passenger departures

<table>
<thead>
<tr>
<th>$k^{th}$ variable</th>
<th>Correlation Coefficient</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation Rate (CCPI %)</td>
<td>-.119</td>
<td>.483</td>
</tr>
<tr>
<td>Per capita GDP (US$)</td>
<td>-.366*</td>
<td>.026</td>
</tr>
<tr>
<td>Interest rate (%)</td>
<td>.429**</td>
<td>.008</td>
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<tr>
<td>Total Migration for Employment</td>
<td>.868**</td>
<td>.000</td>
</tr>
<tr>
<td>Fuel Price</td>
<td>.877**</td>
<td>.000</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>-.903**</td>
<td>.000</td>
</tr>
<tr>
<td>Population ('000)</td>
<td>.905**</td>
<td>.000</td>
</tr>
<tr>
<td>Tourists Arrivals</td>
<td>.914**</td>
<td>.000</td>
</tr>
<tr>
<td>FDI(US$ mn)</td>
<td>.919</td>
<td>.000</td>
</tr>
<tr>
<td>Avg. exchange rate (Rs. Per US$)</td>
<td>.943**</td>
<td>.000</td>
</tr>
<tr>
<td>Gov. Expenditure (US$ mn)</td>
<td>.946**</td>
<td>.000</td>
</tr>
<tr>
<td>GDP (US$ mn)</td>
<td>.952**</td>
<td>.000</td>
</tr>
<tr>
<td>Tax Revenue (US$ mn)</td>
<td>.956**</td>
<td>.000</td>
</tr>
<tr>
<td>Government Debt(US$ mn)</td>
<td>.967**</td>
<td>.000</td>
</tr>
</tbody>
</table>

Below hypotheses has been checked;

Ho: Air passenger arrivals is independent from the $j^{th}$ variable
H1: Air passenger arrivals is depending on the $j^{th}$ variable

It can be concluded that Air Passenger Arrivals is independent from Inflation Rate. Nevertheless Population, GDP, Interest Rate, Average Exchange Rate, Government Expenditure, Total Migration for Employment, Fuel Price, FDI (Foreign Direct Investment), Tax Revenue, Government Debt and Tourists Arrivals are having a positive correlation with Air Passenger Arrivals, whereas Unemployment and Per Capita GDP are negatively correlated.
Table 4. Model summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Squareb</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.985a</td>
<td>.970</td>
<td>.969</td>
<td>560035.010</td>
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<tr>
<td>2</td>
<td>.993c</td>
<td>.987</td>
<td>.986</td>
<td>373957.995</td>
</tr>
<tr>
<td>3</td>
<td>.996d</td>
<td>.991</td>
<td>.991</td>
<td>307544.833</td>
</tr>
<tr>
<td>4</td>
<td>.998e</td>
<td>.996</td>
<td>.996</td>
<td>212819.496</td>
</tr>
<tr>
<td>5</td>
<td>.998f</td>
<td>.997</td>
<td>.996</td>
<td>189689.810</td>
</tr>
</tbody>
</table>

Table 5. ANOVA table for Model

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of square</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>3.313E14</td>
<td>5</td>
<td>6.627E13</td>
<td>1.842E3</td>
<td>.000</td>
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<tr>
<td>Residual</td>
<td>1.008E12</td>
<td>28</td>
<td>3.595E10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.323E14</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Regression coefficients

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Tax Revenues</td>
<td>183.083</td>
<td>62.852</td>
<td>.180</td>
<td>2.913</td>
</tr>
<tr>
<td>Avg Exchange Rate</td>
<td>20217.395</td>
<td>2147.405</td>
<td>.476</td>
<td>9.415</td>
</tr>
<tr>
<td>Tourist Arrivals</td>
<td>2.715</td>
<td>.362</td>
<td>.382</td>
<td>7.495</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>-31203.622</td>
<td>8461.064</td>
<td>-.151</td>
<td>-3.688</td>
</tr>
<tr>
<td>FDI</td>
<td>1151.800</td>
<td>394.986</td>
<td>.122</td>
<td>2.916</td>
</tr>
</tbody>
</table>

Figure 2. Normal probability plot

Model can be interpreted as follows;

Total Air Passenger Movement = 183.083(Tax revenue) + 20217.395 (Average Exchange rate) + 2.715 (Tourists Arrivals) – 31203.622 (Interest Rate) + 1151.80 (FDI)

The partial regression coefficient of Tax Revenue is 183.083, indicates that when Average exchange rate, Tourists arrivals, Interest rate and FDI held constant, as Tax revenue increased by US$ 1 million, on average, Total Air Passenger Movements at BIA increases by 183 numbers of passengers. Where by Average Exchange rate is increased by 1% with the influence of other independent variables held constant, on average, Total Air Passenger Movements at BIA increases by 20,217 numbers of passengers. With the influence of the other independent variables held constant, if Tourists Arrivals is increased by 1 person, on average, total air passenger movements increases by 3 passengers. Further Total Air Passenger movements decreased, on average by 31,204 numbers of passengers, when Interest rate is increased by 1%, whilst all the other explanatory variables are held constant. With the influence of all the other explanatory variables held constant, when Foreign Direct Investment is increased by US$ 1 million, on average, Total Air Passenger Movements at BIA, increases by 1152 numbers of passengers.

In the same manner two models for air passenger arrivals and departures has been fitted and final models are given below;

Total Air Passenger Arrivals = -24.645 (Government Debt) + 1.427 (Tourist Arrivals) + 12492.515 (Average Exchange Rate) + 574.496 (Foreign Direct Investments) -24826.777 (Interest Rate) + 217.004 (Tax Revenue) 

\[ R^2 = 0.999 \]
With the impact of Tourists Arrivals, Average Exchange Rate, Foreign Direct Investments, Interests Rate and Tax Revenue held constant, when Government Debt increases by US$ 1 million Total Air Passenger Arrivals decreases by 24.645, which means in approximation by 25 passengers. As Tourists Arrivals increases by one person, whilst all other explanatory variables held constant, on average Total Air Passenger Arrivals increases by 1.427 numbers (approximately by 1 person). The partial regression coefficient of Average Exchange Rate, 12 492.515emphasises that with the influence of all other explanatory variables held constant, when Average E
xchange Rate is increased by Rs.1 per US$, Total Air Passenger Arrivals increases by 12492 number of passengers approximately. Similarly Total Air Passenger Arrivals increases, on average by 574.496 (approximately by 574) passengers, when Foreign Direct Investments increases by US$ 1 million. With the influence of all other explanatory variables held constant, when Interest rate increases by 1%, Total Air Passenger Arrivals decreases by 24826.777 number of passengers. Further, while keeping all other explanatory variables constant, when Tax Revenue is increased by US$ 1 million, Total Air Passenger Arrivals increases by 217.004 numbers of passengers.

Total Air Passenger Departures = 94.647(Tax Revenue) + 1.445 (Tourists Arrivals) + 9695.827 (Average Exchange Rate) -14316.582 (Interest Rate) +$25.995 (Foreign Direct Investments)

\[ R^{2} = 0.999 \]

The partial regression coefficient of Tax Revenue, 94.647 articulates that with the influence of Tourists Arrivals, Average Exchange Rate, Interest Rate and Foreign Direct Investments held constant, as Tax Revenue increases by US$ 1 million, on average Total Air Passenger Departures increases by 94.647. When Tourists arrivals increased by one person, while all the other variables held constant, on average Total Air Passenger Departures increases by 1.445,which means in reality by approximate one person. Whilst keeping all other explanatory variables constant, when Average Exchange rate is increased by Rs.1 per US$, on average Total Air Passenger Departures increases by 9695.827, which means approximately by 9696 number of passengers. Further, the Air Passenger Departures decreases by 14316.582, when Interest rate is increased by 1%,with the influence of Tax Revenue, Tourists arrivals, Average Exchange Rate and FDI held constant. With the impact of other independent variables held constant, the Total Air Passenger Departures at BIA, on average goes up by 525.995, which is in reality by 526 passengers approximately, as Foreign Direct Investments is increased by US$ 1 million.

V. CONCLUSIONS

Arrivals and Departures are dependent on Population, GDP, Per Capita GDP, Unemployment Rate, Interest Rate, when the fourteen independent variables are considered, they showed a significant correlation with each of the dependent variable, under 5% level of significance, except Inflation Rate against three dependent variables. A negative correlation was shown by Interest Rate and Unemployment Rate as opposed to the all other variables. Hence through the correlation analysis it is a proven fact that, Total Air Passenger Movements, Air Passenger Average Exchange Rate, Government Expenditures, Total Migration for Employment, Fuel Price, FDI, Tax Revenue, Government Debt and Tourists Arrivals and are independent from Inflation Rate.

According to the three multiple linear regression models, the compounding effect of interest rate upon domestic air passenger demand at BIA is negative which is acceptable. The interest rate taken in the research was the interest rate for deposits. When deposit rate is increased the tendency to save money increases. Consequently consumption is decreased resulting in a decline in air passenger demand. Higher interest rates make investments better off in investing on various other industries than spending on air transport related business. Hence higher interest rate shrinks the demand for air transportation posing a negative impact.

It is recommended to carry out further research work to investigate the reasons behind the absence of Population, GDP, Per Capita GDP, Unemployment Rate, Government expenditure, Total Migration for Employment, Fuel Price and Inflation Rate in the three models, which is a debatable outcome of this research. In addition the positive relationship between average exchange rate and three dependent variables also need further investigations since this research outcome is
contradictory to general macroeconomic theories that state, increase in average exchange rate results in decrease in demand for services or products.

REFERENCES


BIOGRAPHY OF AUTHORS

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2Lakshmi Udeshika Ranwala is a statistics lecturer and Course coordinator for BSc ITML programme of Faculty of Management, CINEC Maritime Campus. Her research interests include statistics modeling and Operational research.
The Study on Factors Affecting the Decline of Freight Movement: The Case of Sri Lanka Railways (SLR)

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Abstract — The freight movement by the Sri Lanka Railways has had a dramatic decline over the last three decades. The freight market share of the Sri Lanka Railways (SLR) has come down to 0.7% in the recent past, which was 32% in 1979 showing a drastic decline in the efficiency and competitiveness of SLR in handling freight, relates the Draft National Transport Policy of Sri Lanka. This study focuses on the factors that might have affected this decline. SLR has played a pivotal role for the development of the economy of the country three decades ago as most of the business relied on SLR. It is significant to restore the lost business of SLR in terms of reviving the economy of the country. With this in mind, this study was carried out to identify the reasons that would have resulted the failure of the freight business of SLR.

Keywords: Sri Lanka Railways, Decline, Freight Movement

I. INTRODUCTION

Sri Lanka Railways (SRL) is a government department under the Ministry of Transport. It is a major transport service provider and is the only rail transport organization in the country. At its inception, railway was carrying more freight than passengers. But today, it is passenger oriented. SLR’s market share for passenger transport is about 6% and about 0.7% for goods transport. It could be observed that freight market share has had a great decline over the last three decades. This study focuses on identifying the factors that might have contributed towards this freight decline by SLR. The identified hypotheses are as follows: Substantial development of motorized road transport, lack of inter modal infrastructure facilities connecting railways, presence of freight forwarding firms, lack of competition and private participation, lack of container cargo segment, time delays and reduced speed of the SLR, under investment in rolling stock, lack of customer oriented services, inefficient pricing mechanism for road transport, lack of active regulator, lack of technological aspect and lack of safety.

II. LITERATURE REVIEW

Taylor (2000) says that the substantial development that the roads have achieved in most of the developing nations has led towards the decline of usage of freight by railways. Baumoul (1977) reports that lack of intermodal facilities connecting railways in most rural areas reduces the interest of the people to transport freight by railways. The registration of freight forwarding firms in Sri Lanka and its business activities have captured much of the cargos of Sri Lanka railways, relates Sri Lanka Freight forwarding Association (2010).

Having an active state regulator and the financial support given by the regulator (government) is the prime reason for the success of the Indian Railways (INR) which provides much customer oriented services for both passengers and freight. It can be noted that 60% of the revenue is obtained by INR through freight business, relates, Ministry of Commerce and Industry, Government of India.

III. METHODOLOGY

After the problem was well defined and the hypotheses were developed using study materials based on foreign experiences, primary data was collected from vegetable wholesalers in Pettah market about what had restricted them to use railways to transport their goods from the origin. A visit was made to Pettah and the secretary of the wholesalers Association of the Pettah market was interviewed to get those primary data. A meeting with two main officers of Sri Lanka Railways (General Manager and Operations Manager)
yielded some general overview of the Sri Lanka railways freight division and why it is running on loss. Secondary data was collected from Sri Lanka Railways on the revenues of the freight business of SLR. More secondary data was gathered from Central Bank Annual Reports and from the website of department of Motor Traffic. Data was analyzed using softwares like SPSS and E-Views.

IV. DATA ANALYSIS

SLR is having monopolistic market from its inception. It has not had any competitor right from the beginning. Hence it does not have much interest on its business. Thus its provision of customer oriented services is also less. This is one of the main reasons for the decline of freight business of SLR as freight business needs much customer oriented services. In terms of the freight forwarding firms, they take the goods at customers’ doorstep and safely transport. They have facility that customers can track transit of the goods. The goods are delivered to the doorsteps of the customers. Hence customer does not have to worry of the goods that he sends. But whereas in SLR, customers have to worry of the cargo throughout the transit. The goods are not delivered to the doorstep of the customers.

Road pricing does not implicit the entire total cost incurred. Thus it does not include economic cost. Hence the charges by the lorries, trailers that transport freight inland is less than real cost incurred. This is also a reason for the shift of freight from SLR to road though the freight rates of SLR are cheaper comparatively.

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Figure 1: Conceptual Framework
Figure 1 shows the conceptual framework made between the Railway Freight Kilometer (RWFRKM)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1710.672</td>
<td>4</td>
<td>427.668</td>
<td>11.334</td>
<td>0.037&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Residual</td>
<td>113.203</td>
<td>3</td>
<td>37.734</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1823.875</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 points out that model fit enough for testing the independent variables.
These coefficients portray that increase of road kilometer has resulted in decline of freight movement by SLR. It can be further explained that substantial development of motorized road transport has taken much of SLR's freight. Since the standard errors of the coefficient are high, it can be confidently predicted that there are many other reasons that can result in the reduction of railway freight kilometer other than these identified factors. Those kind of factors have been analyzed quantitatively later.

This test points out that there is a negative relationship between the increases of number of registered trailers against the decline of freight movement by SLR. This can be connected to our another hypothesis that increase of freight forwarders in Sri Lanka has also resulted in the decline of freight movement by SLR as a large number of trailers are used by freight forwarders in Sri Lanka for the movement of freight.

Lack of intermodal infrastructures connecting railways is also a reason for the decline of freight movement by SLR. For instance, if a parcel of garments need to be sent to Kalmunai from Pettah by railways. SLR will lead upto Batticaloa only. The customer has to go to Batticaloa physically from Kalmunai to Batticaloa for taking this shipment to Kalmunai. He can take this down to Kalmunai by a bus. He needs to arrange a three wheeler to take it to his home after getting down from Kalmunai main road.

But when this shipment is given to a lorry operator at Pettah, it directly goes to the doorstep of the customer in Kalmunai where he pays for the carriage. How easy and comfortable is this? Hence the difficulties undergone by the customer when transporting goods via SLR when there is a lack of intermodal infrastructures is immense. In today's fast moving world man needs his desires completed quicker. Hence this factor also leads to the decline of freight movement by SLR.

V. CONCLUSION

Through this study, results that affect the decline of freight movement of SLR have been identified quantitatively and qualitatively. Substantial development of motorized road transport and increase of freight forwarding firms have been proved as the reasons for the decline in freight movement by SLR with the 5% confidence level. And this has been analyzed quantitatively but since the standard error coefficient is high for the independent variable road kilometer, that itself suggests that there are many other factors that should have resulted in the decline of freight. Those possible factors have been analyzed qualitatively considering specific and reliable cases. Whereas lack of active regulator, improper price mechanism for road pricing, lack of technological aspects, lack of competition and lack of customer oriented services have also been explained the factors that could have affected the decline and these reasons have been approached with qualitatively.
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Importance of Ethical Leadership in Public and Private Enterprises of Sri Lanka in Developing and Global Contexts

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A truth that’s told with bad intent beats all the lies you can invent.
William Blake (1757–1827)

Abstract—This conference paper will attempt to address key aspects of a resurgent and a contemporary business issue – importance of ethical leadership in private and public enterprises of Sri Lanka in developing and global contexts. It drew primary survey data as empirical evidence from a developing economy (Sri Lanka), where 17 leaders and managers of Sri Lankan organisations consisting of private and public enterprises were interviewed face-to-face and researched recently, as well as survey data drawn from secondary research contrasted to compare with those of a developed economy (Australia) carried out in a recent identical doctoral research (2011/12) in order to compound the importance when compared with a developed economy and to establish the difference if at all. Organisations and their leaders often underestimate how closely they are being watched by not only by their employees, but by the general public at large both within the country and globally. The leaders actually do versus what they ought to do (Brown, 2007) should not be two things. The importance of this research is the impact of ethical leadership on organisations and their outcomes both in development and global contexts. It affects on management in economic development from a micro (organizational) perspective to a more macro economical perspective posing the central question how important leading ethically is. Leading can be defined as inspiring, motivating and directing. The paper argues, significantly how both economies (Sri Lanka and Australia) behave similarly in leading ethically, but mechanisms that are in place to make organizations accountable for ethical violations which result in acts of misconduct and mismanagement in Sri Lanka are either absent, lacking or ineffective or all of the three; providing motivation and scope for greater mobilization of ethics in Sri Lanka. Ethical leadership is bound to escalate stakeholders and the public to place the country’s image with an improved and positive perception globally and reap benefits of development, according to a conceptual model developed by the author.

Keywords—Ethical leadership, developing, global

I. INTRODUCTION

Ciulla (1998) proposed that ethics is at the ‘heart of leadership’. With public sector and corporate mismanagement and corruption in concerning proportions globally (Global Corruption Barometer 2013 – (http://www.slideshare.net/linkedin/influencer-interviews-sir-martin-sorrell-founder-ceo-of-wpp), the greed to making profits at any cost will continue to reinforce the need for ethical leadership as an antecedent, in a profound and a pronounced manner.

Ethics from a management perspective is defined as ‘The code of moral principles and values that governs the behaviour of a person or a group with respect to what is right or wrong’ (Samson and Daft, 2009). As such, organisations or persons conducting themselves ethically and are in positions of power with followers looking up to them will be considered ‘leading ethically’. When the leader is unethical, followers who are controlled by the position power of the leader and don’t support such unethical behaviour, but are forced to follow due to fears of losing their jobs or potentially having their entire career debilitated is known to have experienced an ‘ethical dilemma’ (alternative choices of behaviours have potentially negative ethical consequences – Samson and Daft, 2009). For example if an employee is required to pay a bribe to get something done on behalf of his
employer/organisation very much against his/her personal wish, that person is considered to be going through an ethical dilemma.

The impact of ethics as a variable on economic development in the Sri Lankan context has not been adequately researched, with the earliest recorded research dating to as late as 1997 (Batten, Hettihewa and Mellor, 1997).

Other than firm-specific factors, socio-cultural factors too influence management’s perceptions of unethical practice (Macdonald and Zepp, 1988; Rashid, 1988).

The purpose of this paper is to examine the importance of ethical leadership in private and public enterprises of Sri Lanka in developing and global contexts, the latter (global contexts) compared with that of a developed economy (Australia) through a recent doctoral research carried out, to understand the cross-cultural differences if any.

Both Sri Lanka and Australia have open economies and similar populations (21 and 22 million respectively) with vastly different socio-cultural environments and economic development indicators.

Questions concerning the following eight aspects which impacted the two key variables - ethical leadership and organisational excellence/country standing were asked from the seventeen participants who were interviewed face-to-face. The following eight open ended questions were drafted considering a fair representation of data collection where all participants responded to same questions. This approach made the research data more reliable and valid.

1. What are individual’s personal values and who/what influenced them the most?
2. What are the values of the organisation they work for?
3. How the individual describes an ethical leader?
4. How the individual describes an unethical leader?
5. Describe an ethical dilemma experienced by the individual
6. If the organisation the individual is working for has a written code of ethics
7. How important is ethical leadership for the development of their organisation?
8. Participant’s views on the greatest challenges impeding development facing Sri Lanka in a global environment/context

The introduction of the paper will be followed by research questions, a literature review, a conceptual framework, research methodology, results, discussion and the conclusion.

II. RESEARCH QUESTIONS

Answers as findings to the following research questions were sought through data gathered via responses to above questions.

A. Is there a correlation between ethical and unethical leadership outcomes on organisations?
B. Is there a positive correlation between ethical leadership on organisational economic development/performance?
C. Is ethical leadership influencing country’s image in the global environment?
D. Is ethical leadership affecting a country’s development?

III. FROM THE LITERATURE

According to Batten et al (1997) there are significant variations in the factors affecting ethical management practice between the two countries (Sri Lanka and Australia), such as a code of ethics and a forum to discuss ethics, whereby Australian firms were ahead of Sri Lanka ones. However, the results suggested that both countries had more scope for the development of better ethical management practice. The challenge here was the very limited number of research and scholarly articles available concerning ethics in Sri Lanka.

In a recent doctoral research by Crews (2011) on ‘What is ethical leadership? A study to define the characteristics of ethical leadership: perspectives from Australian public and private sectors’ where 78 senior executives from diverse industries across Australia were interviewed on ethical leadership, the following principal findings emerged: “Participants’ recollections of ethical leadership centred on three themes: value alignment, governance and relationship-centredness. Ethical leaders are perceived to be individuals who behave
with *integrity, courage* and *trustworthiness*. They are relationship-centred, and *fairness* and *altruism* are the defining features of their relationships with others. In matters of governance, ethical leaders demonstrate adherence to *accountability* measures and *discernment* in their decision-making responsibilities. These findings were opposed to recollections relating to less than ethical leaders, who are defined by deception and self-centredness. In matters of governance, the decision-making of less than ethical leaders reflected *culpability* and *expediency*. Their self-centredness was evident in their *abuse of power* and their *self-serving* behaviour”.

Ethical management practices between Australia and Sri Lanka are likely to vary due to differences in socio-economic and cultural factors (Batten et al, 1997). This is an area of interest for further research.

IV. CONCEPTUAL FRAMEWORK

![Organisational Excellence and Ethical Leadership Grid](image)

Figure 1. Organisational Excellence and Ethical Leadership Grid
Perera, Deepanie, 2011

According to Figure I developed by the author, organisations with a higher degree of ethical leadership excel, thriving on outcomes they are required to produce, whilst the opposite is true for those who assign a low degree of importance for ethical leadership; as deception, corruption and mismanagement may eventually lead their organisations from a slow death to die completely. It may only be a matter of time. As such, the grid shows the importance of ethical leadership towards organisational excellence. The same will apply to a country that may be considered an organisation for all intents and purpose, where people have a great preference to associate those organisations and individuals who lead ethically.

V. RESEARCH METHODOLOGY

A simple random sample of 23 Sri Lankan organisations representing three public sector and twenty private sector organisations were selected. The private sector organisations were both from manufacturing and service industries comprising of medium and large sized organisations in diverse business operations. Among them some were public quoted companies. A diverse sample was used to ensure a high generalisability as a representation. A total of 17 participants provided face-to-face in-depth structured interviews upon having received their written consent for same and having ensured their anonymity. Each participant was identified through a code number assigned and all interviews were audio recorded, again on receiving participants’ consent. The number responded is considered good as a 74% from the selected sample participated. Prior to their interviews, all participants were given a written letter requesting for their permission in writing where conformity with ethical research practices were articulated. The interviews were recorded during the latter part of 2012, as a collaborative research initiative between the writer and an Australian research partner. The author undertook to provide a copy of the findings in the form of an abstract to interested participants. As a strategy to gain more acceptance of the respondents the interviewer opened the discussion with a question on their personal values where all respondents passionately responded to proving their high level of motivation towards the subject. This approach was adopted to avert any hesitation by participants to openly discuss on ethics and ethical dilemmas which may not be socially desirable topics in a country like Sri Lanka with a conservative culture.

VI. RESULTS

The hypothesis was formed in the research questions stated in II above. The null hypothesis for the testing was if ethical leadership was more important for Sri Lanka than Australia in developing and global contexts. The first two interview questions were posed as an ice-breaking entry to the interview. A majority of respondents in response to question three stated that an ethical leader to them was a leader who ‘walked the talk’
(does what he says), which in turn gave an entry and a response of sorts to the next question too, which was about an unethical leader. In describing an unethical leader, respondents used words and phrases like: deception, duplicity, hypocrisy, corruption, misrepresentation, self-centeredness, self-serving interests, leader with compromised values, violation of organisational processes, misuse of power, disrespectful, dishonesty and the abuse of institutional resources for personal gratification. In responding to question five, almost all respondents took the most time and spoke with much passion about their own experiences. Most organisations did not have a written code of ethics; the few (two) who had, complained that the code was not enforced or a divide-and-rule practice towards it prevailed in their organisations making the process dysfunctional and ineffective. They also claimed the code of ethics was a mere attempt to impress upon regulators and compliance requirements of clients, resulting in it not being an instrument that was born through conviction.

All respondents said ethical leadership was highly important for the development of their organisations. Some went on to justify their responses in detail, stating development and sustainability will only stay if the leadership was ethical, followed by ethical practices across the organisation (complied by followers). As the last question was broad in nature, diverse responses were received. This was an intentional strategy deployed to avoid any biases that the respondents may have in slanting the responses more towards ethics. Among a number of various responses such as the lack of a strong nationalistic identity, lack of visionary political leadership, support from the developed world, lack of transparency as a nation, corruption at all levels, skills gaps and skills building challenges, a 37% responded that ethical leadership both at political and institutional/organisational levels were the greatest challenges impeding development mostly economical, facing Sri Lanka in a global environment/context.

When compared with the results of the doctoral thesis through research carried out across 78 Australian organisations threw up similar results to the one carried out in Sri Lanka; with the key difference being the mechanisms available to address unethical leadership issues were present in a much higher degree in Australia than in Sri Lanka. A number of general qualitative remarks and comments (as already mentioned above) provided by participants too were considered in analysing results from the two researches.

VII. DISCUSSION

In responding to the four research questions above, and on having analysed the same, it was clear there was a positive correlation between ethical and unethical leadership outcomes on organisations. This finding also compounded the conceptual framework (Figure 1) presented whereby when an organisation has assigned a low importance to ethical leadership, it had produced a low organisational excellence, meaning the richness of its' outcomes were low. This is easy to comprehend as customers, suppliers and other stakeholders including employees won’t favour associating organisations who don’t lead ethically. Further, there is a positive correlation between ethical leadership and organisational economic development/performance. An unethically led organisation may seemingly do well, but only until the duplicity is exposed. Golden Key scandal is a good example from Sri Lanka whilst the recent withdrawal of GE motor vehicles sold globally since 2004 which were faulty and known by management to be faulty is a good global example for unethical behaviour of a global entity. Both Sri Lanka’s political establishment and organisations that are public and private will project a positive image of the country in the global environment when they are ethically led, suggesting a strong correlation among the variables. In addressing the last question whether ethical leadership is affecting a country’s development, facts and points may be drawn from the responses given to question ‘B’ above – as for one foreign investment, aid and grants will arrive under an environment of ethics and to sustain macro socio-economic development ethics must prevail demonstrating ethical leadership among public and private enterprises. Some qualitative responses to ‘C’ and ‘D’ above were image and recognition, results oriented culture, independence of the judiciary, socio-political and economic stability, personal values, competitive business environment, brain-gain, investment in developing human capital, etc.

VIII. DIRECTIONS FOR FUTURE RESEARCH

A close scrutiny of all socio-economic development parameters could be researched and mapped
directly to ethical leadership. Firm specific parameters such as the size, turnover, industry, even taking different professions (finance, marketing, human resource management, etc.) and industries, etc. as empirical studies may be surveyed to examine ethics in specific professions, industries, markets and even demographically; which certainly would be useful for not only a developing country like Sri Lanka but to all who wish to attain and sustain good results through ethical leadership. As Peter Drucker (1954) said what gets measured, gets managed.

IX. CONCLUSION

The purpose of this study was to research the importance of ethical leadership in private and public enterprises of Sri Lanka in developing and global contexts. The findings through a research among 17 leaders and managers of public and private sector enterprises interviewed were compared against a doctoral research from a developed country - Australia, carried out in 2011 using a much larger sample. The two variables measured were importance of ethical leadership and organisational excellence. The findings were based on a conceptual model (Figure 1) developed by the author where organisations assigning a high importance to ethical leadership thrived on the organisational excellence variable, where the opposite (slow death to die) was true for those with a low importance given to ethical leadership. Though the findings were rather similar whereby both countries assigning a high degree of importance to ethical leadership, the difference was by and large in the mechanisms available, such as a written code of conduct, a forum for ethical issues were essentially what Sri Lankan organisations lacked; likely to be assigned due to being a developing country as mentioned by a number of respondents. This position also reinforced the importance of ethical leadership in a developing and in a global context for Sri Lanka due to reasons mentioned such as image and recognition, results oriented culture, independent judiciary, socio-political and economic stability, personal values, competitive business environment, brain-gain, investment in developing human capital, etc. that must be realised, suggesting to confirm the research subject of this paper – the importance of ethical leadership in public and private enterprises of Sri Lanka in developing and global contexts. The findings also provided answers to the four research questions raised, and discussed under VII above. In conclusion, this paper suggests that ethical leadership is highly important for Sri Lanka in both contexts – developing and global, and it was proved there is a positive correlation between the two variables tested i.e.: ethical leadership and organisational excellence.

ACKNOWLEDGMENT

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Abstract— This paper establishes facts to evaluate the impact of microfinance credit schemes in operation, on the actual living standards of beneficiaries of such schemes. In Sri Lanka, microfinance credit facilities are being granted to the rural poor intending the alleviation of poverty and achieving higher living standards. To accomplish same, the Government has tied up with numerous financial institutions and non-governmental organizations through which a substantial amount of capital has been granted to the poor despite the high levels of risk associated with same. Irrespective of the long history and the large number of institutions involved, only limited knowledge is available of its impact on living standards. No proper paper mechanism is in place for such post-credit evaluation. This study intends to fill this gap.

The study is carried out in the purposively selected geographical areas of Monaragala and Kegalle, among borrowers under various microfinance schemes. For the clarity of the population it has been confined to beneficiaries of facilities granted through licensed commercial banks. The study establishes three independent variables namely; timely utilization of microfinance funds, utilization of microfinance funds for intended purposes and the risk management ability of borrowers. Dependent variables in assessing the living standards are identified as the household assets, household savings and the household expenditure.

Study has utilized primary and secondary data. Primary data are gathered through a structured questionnaire administered to a stratified random sample. The questionnaire was designed to reveal general demographic details of the respondents, enabling more clarified analysis. Secondary data are extracted through documentary sources.

It is concluded, as evidenced in data, all factors identified relating to the microfinance schemes indicates a positive impact of varying degrees on the living standards of the beneficiaries cum borrowers, with the management of risk showing the weakest impact.

Keywords— Micro Finance, Standard of Living, Rural poor

I. INTRODUCTION

“Finance” plays a vital role in the economy of a country, which is well recognized. It covers from small to large scale funding for households and enterprises. Wijewardena (2007) states that Microfinance, its small and unseen brethren, too plays the same vital role, and perhaps much more, with respect to its clientele. The term “Microfinance”, specifies small scale loan or credit facilities, which are offered to the poorest people, in order to ease poverty. Microfinance, covers a wide array of services, viz., credit, deposit, money transfer, insurance, market information etc. Microfinance presents a potent instrument for alleviating poverty and increasing living standards of the rural poor.

Few writers, who are pessimistic in their views, have identified microfinance to be in par with microcredit. Microfinance is much more than microcredit. These two words are used interchangeably in studies, but microfinance concerns itself with such key areas as empowerment of the poor, market developments and access, use of information profitably etc, in addition to the provision of miscellaneous financial services. Given the wider coverage of microfinance, the poor are in a position to derive benefits from microfinance, not only in generating an income, but in betterment of their standards.

Microfinance not only grants credit facilities to the poor, but also the financial literacy and training, technological know-how, programmes to develop skills, savings and insurance. In Sri Lanka there had
been numerous micro credit schemes introduced by the government over the past decades to alleviate poverty. Some of them are “Janasaviya”, “Suduneluma” and at present the Samurdhi Bank and societies.

Microfinance is expected to cater to a specific clientele, the poor, who are normally defined very broadly as those incapable of meeting even the day today basic requirements needed for a decent human life. This group is not homogeneous but depicts a wide diversity. Examination of the microfinance system in the country reveals that the country still lacks a well-defined articulate strategy of assessing the impact of these schemes on the living standards. In this context, the system has largely been left to itself, and has stood the test of time. Hence, it is of importance that the country has a proper mechanism in place to identify the true impact of the micro facilities granted on the target constituent. This paper intends to present the perspective of evaluating the impact of such facilities, and provide a basic structure for the wide evaluation of such schemes.

The geographical areas of Monaragala and Kegalle has been purposively selected to obtain the sample due to the fact that it contains a large number of populations who are considered to be under or at par with the poverty lines, and the majority of lending institutions have focused in lending within the said geographical area. Atapattu (2009), in his study on “Status of Micro Finance in Sri Lanka” states that the poverty levels in Sri Lanka are heterogeneous, which differs widely between Provinces and Districts. It further indicates that according to the data published by the department of Census and statistics in 2002, at the two extremes is Colombo District with 6% of the population living in poverty and Monaragala and Kegalle Districts which registers between 30% - 37% of the population living in poverty. This demonstrates the importance of disaggregating poverty statistics in Sri Lanka in order to get an accurate picture of where the poverty ‘pockets’ lie. Due to this factor, the sample selected is considered as representing the generalized characteristics of the rural poor of the country.

Since the introduction of formally accepted micro finance module by Prof. M Yunus in the seventies, the use of micro credit as a tool of poverty alleviation has been accepted around the world. But the empirical evidence on the impact of micro facilities on standards of living using cross sectional data sets is very mixed. While some studies have found that the access to this type of facilities has a positive, large and a permanent effect on living standards, other studies have found that poverty is not reduced through micro facilities (Chawdry, 2007). These latter studies stated that through micro credit, the poor become poorer, due to the additional burden of debt. The drawback associated with impact assessment studies using one – period – cross-sectional data is that the result of such studies could get biased due to the problem of self selection. This study attempts to avoid such weakness by attempting to assess the impact of micro finance on living standards by gathering data prior to the disbursement of facilities. In the study more reliable estimations on the impact are expected by analyzing the same individual twice. Available secondary data on the living standards of the sample is used to compare the living standards of the same individuals after obtaining the micro finance facilities. The study has considered individuals who have availed themselves of such facilities between year 2010 – 2012 (inclusive of both years) in identifying the population and the sample due to the consideration that the effect of such schemes will take place with a minimum lapse of one year from the date of grant.

Considering the above this research was carried out with the intention of answering the research question of “What is the impact of micro finance facilities on the living standards of the rural poor in Sri Lanka”?,

II. THEORETICAL BACKGROUND

A. Micro Finance

Microfinance is the branch of finance, which helps the poorer segment of the society to keep afloat and helps them to gradually and progressively cross the poverty line and get them cohesively integrated into the rest of the society. The development of micro finance has taken a steep rise with the introduction of the Grameen Model by Prof. Mohamed Yunus in Bangladesh in 1976. Choirtonenko and Rahman (2009) have emphasized the significant factors of Grameen model which has added value to the lives of people. Despite the rates of interest payable, (whereas the rates of interest are comparatively high than average lending) this acts as an effective
mechanism to disseminate precious information on ways to improve the health, education, legal rights, sanitation and other living standards, which are of relevant concerns for the poor.

As Banuri (2006) pointed out microfinance is the lending of extremely small amounts of capital to poor entrepreneurs in order to create a mechanism to alleviate poverty by providing the poor and destitute with resources that are available to the wealthy, albeit at a smaller scale. He identifies that through alleviation of poverty the benefactors of such schemes would achieve high standards of living.

Adding to that, some writers (Murray & Boros, 2002; Ledgerwood, 1998) stated in their books that microfinance consists of several main characteristics inclusive of advancement of living conditions. The fact that the micro finance facilities are collateral free, presents the lenders with an additional risk of default, emphasizing the fact that a proper mechanism of post – credit evaluation is needed to be adopted. Due to the presence of the default factor, the finance facilities does not work on a perfect market equilibrium like other commodities, with a positively corresponding demand and supply regimes.

Further, Wijewardena (2007) has stated that microfinance is to be reorganized as an important element in poverty alleviation system since its vital role in the overall financial system has created a systematic impact. Hence same need to be explicitly incorporated into the national development strategies. He further states that the failure of any national level micro finance scheme would bring a social cost to the society. Every level of the society has to be growing for a national development thus a “system that benefits a sizeable segment of the society” is important to be analysed for its actual impact.

Microfinance schemes, if left un-assessed, would work as a safety net, a normal strategy used to capture the poorest segment of the society, prior to them making a free fall to the ground. The objective is to provide some relief, to meet the very basic requirements (Brau, 2004). Adding to the above view of Brau (2004) it could be noted that the weaknesses in this type of strategies are well known. Economists have long named this problem as the “moral hazard” problem. It encourages poor people to remain in the safety net forever. They have no incentive to move out of the net, because moving out would mean their having to work hard for a living. As a result, he increases the chance of the occurrence of the event which the helper desires to prevent. The consequence is that it imposes an additional burden on the helper. As a result, neither the helper nor the helped would be able to get out of the vicious circle in which the both parties would get trapped.

The moral hazard behaviour by people who get free goods is not a new phenomenon. It had been known for many centuries. The Buddha has preached in one of the discourses titled “Chakka Vatti Seehanaada Sutta” how the king of a country was duped by the people who were given free capital to commence self-employment projects. Above theoretical background explicitly states that schemes which are targeting the alleviation of poverty have to be well monitored and evaluated in achieving its original objectives.

Some literature which is available in the area does not give conclusive evidence of the impact of micro finance schemes on the living standards. According to Thilakarathne and Wickramasinghe (2005) in a study conducted on the impact of micro finance scheme on the household income, covering 17 districts of Sri Lanka (except North and East), over 50% of the households have confirmed that there had been a significant improvement in their income levels, while a considerable amount had stated that they have not experienced a major improvement in the level of income. However the above research states that micro finance has played a vital role in increasing the level of income which is important for a developing country like Sri Lanka. It further states that micro finance is designed towards improving the standards of living and even a least improvement on the income of the selected segment of low income earned people will bring higher benefits rather than for people with good income levels, as it will have a major impact on the level of consumption, child education, savings, health, and many other aspects of living standards.

B. Status of Microfinance and Poverty in Sri Lanka
A sectorally disaggregated view given in available sources shows the highest levels of poverty occurring in the provinces of Southern, Uva and Sabaragamuwa. Overall, rural areas are poorest – 90% of the poor live in rural areas, but this statistic
must be understood in the context of urban/rural classification in Sri Lanka which classes the vast majority of the population as rural.

Further it could be noted that the poverty head count index in Sri Lanka is not uniform across provinces and districts. According to published data by the Department of Census and Statistics, seven (7) out of 25 districts (Badulla, Hambantota, Kegalle, Matale, Moneragala, Puttalam and Ratnapura) had between 30-37% of their populations in poverty. Of these only Hambantota and Puttalam have shown huge reductions in poverty during 2006 (nearly 20% less) while others show a marginal reduction in the proportion of poor.

In relation to the above stated income inequality, Atapattu (2009) states that the relative position of the poor has fallen over the past few decades. While Gross Domestic Production (GDP) may be rising in Sri Lanka, this growth is not being converted into poverty reduction as the poor's share of that growth is not large enough, and falling. He further states that no studies or research exist where this variable has been isolated and which shows microfinance’s contribution to national poverty alleviation.

As reported by Steinwand and Bartocha (2008) on ‘How microfinance improves lives in Sri Lanka, microfinance is a multifaceted benefactor that affords the poor to rebuild their lives, plan for their future and that of their children, empower them with self esteem, integrate in to social fabric by enjoying access to social networks and making contributions towards welfare of their families and that of the community. The impacts of microfinance are a mix in most cases where one impact leads to another.

Apart from the above, the most immediate impact of such facilities foreseen among their clients is the economic benefits such as increase in income. According to the project on “Empowerment of the poorest of the poor women and young girls in Sri Lanka Project” of Women’s Development Foundation (WDF) in Hambantota (De Silva & Alles, 2008) it has been stated that 52 of the 73 microfinance borrowers (71%) report an increase in sales and profits. According to the study “Microfinance in Sri Lanka: A Household Level Analysis of Outreach and Impact on Poverty” (Thilakarathne & Wickramasinghe, 2005) 44.2% of the microfinance clients have achieved an increase in income, whilst 53.6% have not. This survey has further studied on income earning by clients at different income levels by dividing the clients in to 5 quintiles according their income levels.

Banuri (2006), in his research to identify the impact of granting microfinance in order to alleviate poverty states that with a higher amount of microfinance lending the poverty will decrease due to the decrease in income inequality and increase in entrepreneurial capacity. Further developments of the study under the topics of “The increase in microfinance towards decreasing of poverty”, “Decrease of poverty towards reducing income inequality” and “ Granting of higher amount of MF loans to experience a higher level of entrepreneurship “ the impact of microfinance on income inequality, poverty and entrepreneurial activity shows a positive relationship. Households of the developing countries (inclusive of Sri Lanka) were used as the benchmark unit in achieving the above results.

### III. CONCEPTUALIZATION AND RESEARCH METHODOLOGY

This study establishes Micro Finance Facilities as the independent variable, with three sub variables namely; timely utilization of funds deployed through micro finance schemes, utilization of microfinance funds for the intended purpose (Thilakarathne & Wickramasinghe, 2005) and the risk management ability of the borrowers (Banuri, 2006). The impact of these three variables is tested against the dependent variables of household assets, household savings and household expenditure which have been identified as contributory factors in measuring the standard of living (Banuri, 2006). (See Figure 1).
A. Study design and participants

Pre and post study design has been adopted where the data in relations to the living standards of the beneficiaries of the micro finance schemes under consideration, prior to disbursement of such facilities, has been collected through secondary data provided by the lenders of such schemes. The secondary data collected has been compared and contrasted with the data collected in the study, to access the impact of micro finance schemes on the living standards. This allowed the same individual to be assessed twice, avoiding the biasness of using one-time cross sectional data to analyse the impact of such schemes. The total population of the research are the people who have obtained micro finance facilities in the selected geographical areas of Monaragala and Kegalle within the period from 2010 – 2012. For the purpose of clarity, this population has been confined to the beneficiaries of such schemes granted through licensed commercial banks within the area. As per the records, total population is identified as 465 and the sample size has been decided as 115, by adopting a confidence level of 95% with a confidence interval of 8%.

Stratified random sampling technique has been adopted in the study, where the population has been divided to three strata according to the pre – micro finance income levels in order to achieve sampling homogeneity. The strata are identified according to the monthly income groups of A – less than Rs 5,000/-, B – between Rs 5,000/- to Rs 8,000/- and C – between Rs 8,000/- to Rs10,000/-. 

B. The instrument

The instrument utilized for primary data gathering is a questionnaire, comprising of 21 close ended questions, structured to measure the impact of the micro finance facilities on identified determinants of living standards. The first part of the questionnaire was structured in a way to gather basic demographic details of the respondents, in order to have more classification on analysis. Same was designed bilingually. (Sinhala and English)

C. Data collection and analysis

Participant were approached in an effort to engage in a discussion, and depending on the interest demonstrated in the initial stages, they were asked to complete the questionnaire, and a small incentive was used to gain more interest from respondents. Once the data collection was completed, it was coded and analysed using the statistical package for social sciences (SPSS) – Version 16.

Data was analysed to understand the demographic details of the respondents, to establish the relationship between individual sub variables and the two main variables. It was further analysed according to the identified strata in order to understand the income pocket which is mostly benefited from such schemes.

D. Hypotheses, Objectives and Significance

In the study, the following hypotheses were tested;

H₀ – Micro finance facilities does not have a positive impact over the living standards of borrowers

H₁ – Micro finance facilities does have a positive impact on the living standards of the borrowers.

Objectives - The foremost objective of this study is to assess the impact of micro finance facilities on the living standards of the rural poor while analyzing the improvement in the household assets, savings and expenditure has been identified as the sub objectives.
IV. DATA PRESENTATION AND ANALYSIS

A. Demographics
The selected sample consisted of 82% of males, and the majority of the sample (53%) had between 3-4 members in their families. 54% of the sample population has stated that they have been engaged in the similar employment for the past 6-10 years, while 43% has declared that the period of their current employment is more than 10 years. And the majority of them are engaged in agricultural and trading activities.

B. Analysis of relationship between independent and dependent variables
1) Timely utilization of funds: The correlation for this variable stands at 0.387, which shows an average positive relationship according to the Pearson correlation analysis. The correlation is significant at 0.01. (See Table 1)

![Figure 2. Linear regression between timely utilization of funds and the response variable (living standards)](image)

2) Utilization of funds for the intended purpose: The correlation for this variable stands at 0.558, indicating a strong positive relationship between the said variable and the standard of living. (See Table 2)

Through the below data analysis, it is evident that there is a strong “positive relationship” between the two variables, indicating that it has a positive impact in improving living standards.

Table 1. Correlations between Standard of living and Timely utilization of funds

<table>
<thead>
<tr>
<th></th>
<th>St_of_living</th>
<th>Timely_Utiliz</th>
</tr>
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<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.387**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>115</td>
<td>115</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.387**</td>
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<td>Timely_Utiliz</td>
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<td>Pearson Correlation</td>
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<td>Sig. (2-tailed)</td>
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<td>N</td>
<td>115</td>
<td>115</td>
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**. Correlation is significant at the 0.01 level (2-tailed).

It is evident through the collected data that the timely utilization of funds deployed through microfinance facilities is positively impacting the living standards of the rural poor.

The R^2 linear value of the above two variables has been identified as 0.150 as illustrated in the below graph.

Table 2. Correlations between Standard of living and utilization of funds for the intended purpose

<table>
<thead>
<tr>
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<th>St_of_living</th>
<th>Intended purpose</th>
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<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.558**</td>
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<tr>
<td>Sig. (2-tailed)</td>
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<td>N</td>
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<tr>
<td>Pearson Correlation</td>
<td>.558**</td>
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<td>Intended purpose</td>
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<td>Sig. (2-tailed)</td>
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<td>N</td>
<td>115</td>
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**. Correlation is significant at the 0.01 level (2-tailed).

Upon reviewing the ideas expressed by the lenders of these schemes, it denotes that they consider the fact “utilization of money for the intended purpose” as a requirement in considering further credit facilities. This could have been the contributory factor for the positive relationship but the study has not collected necessary data in order
to establish a relationship with the lenders initiative and the above independent variable. The linear value ($R^2$) for utilization of funds for the intended purpose and the living standards were calculated at 0.311.

![Figure 3. Linear regression between utilization of funds for the intended purpose and the response variable (living standards)](image)

3) Risk management ability of the borrower: The Pearson correlation for this variable is calculated as 0.149, which indicates a positive relationship, but comparatively to the previous variables the relationship is weaker (See Table 3) The linear regression value between the two variables is calculated at 0.022 (See Figure 3)

| Table 3. Correlations between Standard of living and risk management ability of borrowers |
|---------------------------------|-----------------|
| St_of_Living                    | Risk_Mgmt       |
| Pearson Correlation             | .149            |
| Sig. (2-tailed)                 | .112            |
| N                               | 115             |
| Pearson Correlation             | .149            |
| Sig. (2-tailed)                 | .112            |
| N                               | 115             |

**. Correlation is significant at the 0.01 level (2-tailed).

![Figure 4. Linear regression between risk management ability of borrowers and the response variable (living standards)](image)

Most of the participants of the study found that this area is intriguing as they were trying to provide an overview of the knowledge provided by the lending institutions along with the funds in managing their enterprises. The respondent’s experience with regard to this learning process varied, indicating an inconsistency within the system of imparting such knowledge. Nevertheless, as proven by data, the risk management ability of the borrowers has a positive impact on their living standards.

4) Relationships indicated within sub variables: in analysing the relationship between the sub variables, it was indicated that the correlation value between each of the sub variables indicate a positive relationship, having a correlation value varying from 0.122 to 0.326, when identified at the significance level of 0.01. This indicates that even with an indicative positive relationship between sub variable, the relationships are only weakly positive. With regard to the increase in household savings and household assets, two interesting points were revealed in the process of data gathering. Most of the respondents could not assure that they have a significant increase in household savings due to the micro finance loans, but none of the responses were affirmatively negative.

Household savings of the micro finance borrowers plays a vital role in increasing their living standards. This could lead to building up of a capital which could be utilized as additional capital in investment projects. This would result in higher returns as a scale effect (Stiglitz, 1974) thus increasing their living standards.
Table 4. Correlations between utilization of funds for the intended purpose and household savings

<table>
<thead>
<tr>
<th></th>
<th>Savings Habit</th>
<th>Int_Purpose</th>
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<tbody>
<tr>
<td>Household Saving</td>
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</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
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<tr>
<td></td>
<td>N</td>
<td>115</td>
</tr>
<tr>
<td>Int_Purpose</td>
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<td></td>
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**. Correlation is significant at the 0.01 level (2-tailed)

The above table indicates the relationship between utilizing the micro finance funds for the intended purpose and household savings. The relationship is positive with an indicative correlation value of 0.326. When the household savings is tested against the other two independent sub variables, a correlation value of 0.211 and 0.174 was indicated for the timely utilization of money and risk management ability respectively. This indicates that the household savings is indicating the strongest positive relationship with utilization of funds for the intended purpose.

In analysing the relationship between household expenditure and the independent sub variables, the most significant relationship was indicated between household expenditure and utilizing the funds for the intended purpose at the correlation value of 0.366.

5) Findings according to identified strata: The collected data was analysed separately according to the identified strata prior to arriving at the final findings indicated above. It was revealed that the positive impact of the micro finance facilities in improvement of living standards were more strongly indicative in the income group “C” with a pre credit income level of Rs 8,000/- to Rs 10,000/-. This indicates that compared to the lowest level of income earners, the average income earners gain more benefits in increasing their living standards as a result of receiving micro finance facilities. For further precision, the individual variables were also analysed for income strata, and it was indicated that within the income group C, the risk management ability shows a stronger relationship with living standards in comparison to the group A and B. This could be the reason for the higher improvement of living standards within the members of group “C”, and it could be identified that they have developed the ability of managing risk better than the other income groups. This indicates a contrasting finding to the study undertaken by Thilakarathne and Wickramasinghe in 2005, where it has been stated that the lowest level of income generators reap the highest benefits of such schemes. Nevertheless in that study the impact of micro finance facilities are analysed on the income levels of the selected segments, but not on the living standards. Apart from the above findings, it has also been identified that only 18% of the sample has been females and the balance was represented by males. The main two areas funded by the micro facilities are agriculture and trading. There are no negative relationships identified during the analysis of data collected through the study.

Table 5. Correlations between utilization of funds for the intended purpose and household assets

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<th>HH_assets</th>
<th>Int_Purpose</th>
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<tbody>
<tr>
<td>HH_Assets</td>
<td>Pearson Correlation</td>
<td>.352 **</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
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<td></td>
<td>N</td>
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<tr>
<td>Int_Purpose</td>
<td>Pearson Correlation</td>
<td>.352 **</td>
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<td></td>
<td>Sig. (2-tailed)</td>
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<td></td>
<td>N</td>
<td>115</td>
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**. Correlation is significant at the 0.01 level (2-tailed).
6) Hypotheses testing: According to the data gathered and analysed, hypotheses testing proves that the null hypotheses of “Micro finance facilities does not have a positive impact over the living standards of borrowers” could be rejected and the alternative hypotheses of “Microfinance facilities does have a positive impact on the living standards of the borrowers” is accepted.

V. CONCLUSION

As per the statistically analysed data gathered through the research, it is evident that the variables identified as contributory factors of micro finance facilities; timely utilization of micro finance funds, utilization of funds for the intended purpose and the risk management ability of the borrower, is proven to have a positive impact on the living standards of the rural poor. Among the identified factors, utilization of funds for the intended purpose deployed through such facilities has indicated the highest positive correlation value with the living standards. This is indicated in relation to all three dependent variables identified namely; household saving, household assets and household expenditure. Although a positive relationship has been established, the increase in the household savings and the household assets indicated a weaker relationship with the independent variables when compared to household expenditure, thus indicating the increase in the income of the borrowers has been utilized for spending rather than savings.

The improvement of the living standard by availing of micro finance funds is mostly evident in the pre-credit income group of Rs 8,000/- to Rs 10,000/- per month. It further indicates that, although micro finance desires the improvement of the living standards of the lowest income level; the required development is lacking at the bottom layer of the development pyramid; the lowest income pocket. Further, the demographic analysis indicates that the micro finance method adopted by the Sri Lankan commercial banks, do not consider a gender preference, which is not in accord with the Grameen model developed by Prof. Mohammed Yunus giving priority to women borrowers.

In analysing data it was revealed that 64% of the clients reported a financial relationship between 6 - 10 years with their respective lenders. This indicates that the majority of the micro finance borrowers are engaged in the borrowing activities for a longer period of time, indicating that they have reaped repeated benefits out of the schemes and their repayments have been in order, as it is evident that the lenders have willingly continued the relationships.

In analysis of the individual variable the weakest positive relationship was indicated with the independent variable of risk management ability of the borrowers. This emphasises the fact that though the auxiliary service of micro financing, steps should be taken to educate borrowers on risk management capabilities and adaptation of risk mitigating methods.

It could be concluded that there certainly exists a positive impact of the micro level development initiatives in the form of micro finance facilities granted by the commercial banking system organizations on the upliftment of the living standard of the rural poor in Sri Lanka.

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A Review on Geometric Brownian Motion for Forecasting the Daily Share Prices in CSE

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Abstract — Capital Investments in stock market is the easiest and fastest way for building healthy financial foundation for our future life. As a result, stock markets have become more institutionalized in the past few decades and have been advanced as the main forms of investments for numerous organizations as well as individuals for arranging large investment funds to the general public. Present study mainly focuses an attempt to develop a suitable model based on Geometric Brownian Motion (GBM) to estimate the short-term share price behaviours in the Colombo Stock Exchange (CSE), Sri Lanka based on daily price indices data from January to December, 2013. Furthermore, a time series technique such as ARIMA was used to compare the results.

Keywords — GBM, ARIMA and MAPE

I. INTRODUCTION

Data analysing and forecasting in the financial sector has been regarded as one of the biggest challenges in the modern economy today. Especially, economical decisions should be taken for predicting future results might involve numerous economic policies as well as economical behaviours.

During the last few decades, equality markets all over the World have been advanced as main forms of investment for numerous organizations and individuals arraying for large investments funds. As a result, huge companies as well as cooperation’s have been offering shares to general public and raise their money needed for restructuring, expansion for new operations. It is common phenomenon that, if the company has obtained the capital needed, the shareholders will take benefit through dividends paid by companies. So, the shareholders have alternatives for transferring or selling their ownerships as their requirements. When the company is running well, the price of their stocks would also be going up and make a profit for the investors.

According to the previous studies, stability of the stock market and the economic growth and development of the country are highly associated to one another. Furthermore, Government rules and regulations, numerous macro-economic and micro economic conditions, political and financial stability of the country are also significant predictors of the volatility of the market fluctuations.

Balaban et.al (1996) have examined the informational efficiency of the Turkish Stock Market by using the daily closing prices of equally weighted composite index from 1985 to 1995. Various macro-economic variables such as interest rates, money supply aggregates and currency rates were used as predators of the information effeminacy of the market. Their findings suggested that interest rates and money supply aggregates have significant influence over the market fluctuations. Poshakwale et al. (1998) also conducted a similar type of case study to evaluate the market efficiency in the Bombay Stock Exchange within a six-year period from 1987 to 1994. Non parametric techniques were deeply applied for evaluating the skewness properties of the frequency distributions in the price levels of BSE. The results indicated that Bombay market (BSE) was not in a weak form efficient.

The unbalanced behaviors pose a high risk for the investments. However, higher risk always brings higher returns. The difference between risk and return indicates whether the investment is good or
bad (Tan, 2012). Gupta et al. (2007) attempted to find out the short-run and long-run relationships between stock market validity with respect to the macro and macro-economic variables. Randomly selected six market indices and related macro factors such as inflation, exchange rates, money supply and interest rates were used. Study result shows the strong co-relation between macroeconomic variables on the stock market indices as well as stock's volumes (Campbell, 1997).

Colombo Stock Exchange (CSE) is one of the most modernized stock exchange in South Asia with a fully automated trading platform. Moreover, it has been one of the best preform stock exchange in the world with market capitalization over US$23 billion with average daily turnover rising over US$18 billion. Because of the political stability of the country, many local and foreign investors have been investing huge capitals after the end the civil war in the north part of country in 2009 (Samarathunga, 2008). However, comparing with other stock exchanges, very few studies can be seen in relevance to the CSE.

Using the market and sector indices, Samarakoon et.al (1996) has investigated the market behaviors of the short term (daily, weekly, monthly and quarterly) predictability of the stock returns with respect to the inflation rates in Sri Lanka from 1985 to 1995. According to their study, inflation rates can be categorized in to four categories namely contemporaneous, lagged, expected and unexpected inflations. The results suggest that both lagged inflation and expected inflation are significantly and positively correlated with stock returns. However, unexpected inflations are found to be negatively related to stock returns.

A review of extant literature suggests that more empirical studies are required to investigate the behaviour of stock prices. Athapathu et al. (2011) has done a similar type of study and examined the relationship between the stock market performance and economic growth using the data for the period spanning from 1997 to 2008. Results of Granger causality and Vector Error correction reveal that there is a long run equilibrium relationship between the economic growth and stock market performance in Sri Lanka (abeysekara, 2001).

There are Two price indices mainly manipulation in the CSE namely All Share Price Index (ASPI) and the S&P Sri Lanka 20 Price Index (S&P SL20) (Rathnayaka, 2013). The S&P SL20 is the principal stock index, which is computed by using the best performing 20 companies’ stock prices. This study basically aims to understand the trends and cyclic patterns in the CSE in order to predict the future behaviors.

The rest of the paper is organized as follows. Next section briefly explains the methodological approach used in the study and Section three presents the outcome of statistical analysis and discusses the result of the study. Final section concludes the study alone with proposing avenues for future research.

II. METHODOLOGY

The study was carried out on the basis of secondary data, which were obtained from CSE, annual reports of Central Bank of Sri Lanka and different types of background readings and other relevant sources. Daily trading data (more than 240 daily observations) from January 2013 to 2013 December were extracted and tabulated.

Data analysis consists of several phases. In the first phase, stock market validations were identified using traditional auto regressive methods such as ARMA and ARIMA models. In the second stage, proposed GBM algorithm was used to predict future predictions. Finally, similarities and discrepancies between the traditional time series approaches and our proposed model was discussed based on the MAD and MAPE testing accuracies techniques.

F. ARIMA Model Approach

The Autoregressive integrated moving average (ARIMA) model has been successfully applied today in wide areas for predicting future movements in the non-stationary data patterns. ARIMA model is a generalization of an Autoregressive moving average model. Basically, it consists three parts. They are; the auto regressive parameter (p), the number of differencing passes (d) and moving average parameter (q) (Seneviratne, 2013; Breckling, 1989).

The moving average process in equation 01 and auto regressive process in equation 02 can be written as follows ;

\[ X_t = \mu + Z_t + \theta_1 Z_{t-1} + \theta_2 Z_{t-2} + \ldots + \theta_q Z_{t-q} \]  

(1)
**Geometric Brownian Motion**

A geometric Brownian motion is a continuous-time stochastic process, which satisfies a stochastic differential equation follows a Brownian motion with drift. Currently, it is widely used for the dynamic models to provide a more realistic approach in the financial sectors.

The drift rate or growth rate of the distribution can be assumed as a constant and defined as equation 04 (Kong, 2010).

\[ \text{Mean} = \mu = \mathcal{E}t \]

(4)

The volatility (standard deviation) of the distribution is significant and elusive quantity in the theory of derivatives. The standard deviation of the asset returns over a time step \( \mathcal{E}t \) is given as equation (05).

\[ \text{Standard Deviation} = \sigma = \mathcal{E}^{1/2} \]

(5)

Putting these scaling’s explicitly from equation 04 and equation 05 into asset return model as follows in equation 06.

\[ R_t = \frac{S_{t+1} - S_t}{S_t} = \mu \mathcal{E}t + \sigma \mathcal{E}^{1/2} \]

(6)

The term \( dW_t \) be a random variable, from normally distributed with mean zero and variance \( \sigma^2 \). So equation (06) can be simplified as follows.

\[ dS_t = \mu S_t d\mathcal{E}t + \sigma S_t dw_t \]

(7)

Integrating equation (7) with respect to t;

\[ \int_0^t dS_u = \mu t + \sigma w_t \]

(8)

Where; let we assume that, \( w_0 = 0 \). The term \( dS_t / S_t \) coincided to the derivative of \( \ln S_t \). It is clear that, \( S_t \) term under the Ito process. So we used Ito’s calculation for our further study.

\[ S_t = S_0 \exp \left( \left( \mu - \frac{1}{2} \sigma^2 \right) t + \sigma W_t \right) \]

(9)

Where; \( W_t = x_t - x_0 \). Equation (09) indicated continuous stochastic process of Geometric Brownian motion that we used for simulated the forecast of stock market indices.

### III. RESULTS AND DISCUSSION

The study was carried out on the basis of two hundred and fifty (240) daily trading data for 12 months period from January 2013 to December 2013.

#### B. Stationary/Non Stationary Model Checking

<table>
<thead>
<tr>
<th>Variable</th>
<th>p-value associated with the test</th>
<th>Variable</th>
<th>p-value associated with the test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level data</strong></td>
<td><strong>1st Difference</strong></td>
<td><strong>Level data</strong></td>
<td><strong>1st Difference</strong></td>
</tr>
<tr>
<td><strong>ADF Test</strong></td>
<td><strong>PP TEST</strong></td>
<td><strong>ADF Test</strong></td>
<td><strong>PP TEST</strong></td>
</tr>
<tr>
<td>SAP</td>
<td>0.375</td>
<td>0.553</td>
<td>SAP</td>
</tr>
<tr>
<td>ASPI</td>
<td>0.375</td>
<td>0.387</td>
<td>ASPI</td>
</tr>
</tbody>
</table>

The Unit root test results in Table 1 suggested that, two series of data are stationary at only their 1st differences. So that Table 1 result suggested that, ARIMA models are the most significant and suitable for predicting future patterns. The minimum values of Akaike information criterion (-9.063916 and -8.965017) and Schwarz criterion (-8.993680 and -8.932374) suggested that, ARIMA (3, 2, 1) and ARIMA (1, 1, 1) models were most suitable for
predicting future patterns of ASPI and SAP respectively.

Table 2. Forecasting Results: ASPI

<table>
<thead>
<tr>
<th>Dates</th>
<th>Actual Values</th>
<th>ARIMA (3,1,2)</th>
<th>Residual</th>
<th>GBM Residual</th>
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</thead>
<tbody>
<tr>
<td>2/12</td>
<td>5774.1</td>
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<td>-4.23301</td>
<td>5775.09</td>
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<td>5773.12</td>
<td>5778.171</td>
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<tr>
<td>4/12</td>
<td>5782.92</td>
<td>5773.992</td>
<td>8.92762</td>
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<tr>
<td>5/12</td>
<td>5780.58</td>
<td>5782.96</td>
<td>-2.37962</td>
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<tr>
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<td>5810.24</td>
<td>5784.109</td>
<td>26.1307</td>
<td>5799.58</td>
</tr>
<tr>
<td>9/12</td>
<td>5821.3</td>
<td>5815.916</td>
<td>5.38385</td>
<td>5820.24</td>
</tr>
<tr>
<td>10/12</td>
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<td>5823.213</td>
<td>-44.6932</td>
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<tr>
<td>11/12</td>
<td>5787.81</td>
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<tr>
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<td>5855.472</td>
<td>7.71754</td>
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</tr>
<tr>
<td>13/12</td>
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<td>5792.56</td>
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<tr>
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<td>5901.099</td>
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<td>MAPE (%)</td>
<td>0.236</td>
<td>0.047</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAD</td>
<td>13.785</td>
<td>2.7495</td>
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</tr>
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Table 3. Forecasting Results: SAP

<table>
<thead>
<tr>
<th>Dates  (2013)</th>
<th>Actual Values</th>
<th>ARIMA (1,1,1)</th>
<th>Residual</th>
<th>GBM Residual</th>
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</thead>
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<td>3174.223</td>
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<td>3163.94</td>
</tr>
<tr>
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<td>3165.05</td>
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<td>-3.82114</td>
<td>3225.13</td>
</tr>
</tbody>
</table>

The forecasting result’s with error analysis results in Table 2 and Table 3 show that, proposed GMB and ARIMA models are highly accurate (less than 10%) with lowest MAPE error values.

Moreover, results clearly show that proposed GBM forecasting model (GMB-ASPI: 0.047%, GBM-SAP: 0.029%) is more significant than traditional ARIMA methods (ARIMA(3,2,1): 0.236%, ARIMA (1,1,1): 0.0517%) for forecasting short term predictions. According to the Figure 1 ASPI and SAP plots also suggested that, proposed GBM model is more suitable for forecasting stock market indices than tradition forecasting approaches.

IV. CONCLUSIONS

Behavioral analysis of the stock market fluctuations are an important research direction today. Miscellaneous kind of research works based on financial markets around the world can be seen in the literature. The current study is mainly deals with the design and methodology used in explaining the predictive ability and profitability of technical trading strategies in the Colombo Stock Exchange, Sri Lanka.

In the past few decades research works show that, time series approaches such as ARMA and ARIMA were widely used for data forecasting. However after 2000, computational algorithms have been successfully applied to real-world problems. As a result, different type of computational methods such as Geometric Brownian Motion, Neural network models have been developed.

In the current study, two types of statistical techniques were widely used to discuss our result.

Figure 1. ASPI and SAP forecasted results
They are: GBM and ARIMA approach. The minimum values of Akaike information criterion and Schwarz criterion suggested that, ARIMA (3, 2, 1) and ARIMA (1, 1, 1) models are most suitable for predicting short-term patterns of ASPI and SAP price indices respectively. Furthermore, the mean absolute percentage error (MAPE) result reveal that (ARIMA (3, 2, 1) : 0.00236 and GBM :0.00047/ ARIMA (1, 1, 1) : 0.000517 and GBM : 0.00029), this new proposed model is more significant and gives the best solution to predict short term predictions in high volatility fluctuations.

REFERENCES


BIOGRAPHY OF AUTHORS

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Abstract—This study examines the level of Environmental Disclosures by the companies listed in Colombo Stock Exchange (CSE) in Sri Lanka and their association with some specific attributes of the companies. For this purposes, a sample of 36 companies listed in Colombo Stock Exchange under Manufacturing Sector were selected. The level of Environmental Disclosure by each company is measured using Environmental Disclosure Index (EDI). EDI consists of 19 items of disclosure under four categories. Further, content analysis is used to analyze the level of Environmental Disclosure. The greatest score of 3 is awarded if the item related to Environmental Disclosure Index is disclosed quantitatively and specifically. A score of 2 is assigned to non-quantitative but specific information and score of 1 is given to general qualitative information. The association between companies-specific attributes and level of Environmental Disclosure is examined using Ordinary Least Squire Regression Model. The calculated EDI reveals that the level of Environmental Disclosure by Sri Lankan manufacturing companies is at a very low level. Therefore, the conventional financial reporting was confined to the provision of information on various facets of financial performance of business entities to the shareholders. However these views about the responsibility of the entities are changing today. It is commonly accepted today that they are responsible for a broader group of stakeholders for their social and environmental performances as well as their financial performances (Senarathne, 2008). During the past two decades, with the expansion of industrial activities may adversely effect on natural environment. Thus, societal concern for environment matters and demand for environmental information has dramatically increased (Christopher, 1997). Therefore, in these days, most of the large companies are aware of the environment as a business issues (Descano, 1999) and they have recognized the value of social responsibility in addition to their primary objective of maximizing profit (Villiers and Vorster, 1997). On the other hand, as societal concern of the environment grows, many companies are becoming more responsive to stakeholders’ demand for information of corporate social responsibility. According to a study of the Institute for Environmental management and the accounting firm KPMG, 35% of the world’s 250 largest corporations now issue environmental reports (Kolk, 2000).

Environmental reporting which is a relatively recent development in accounting can be treated as the media to communicate the environmental impact of business entities for their stakeholders. Therefore with regards to the environment, there is a “social contract” between the accounting entity and society at large, and stakeholders have a “right” to know information on the environmental impact of the organization’s activities (Deegan, 2000). Guthrie & Parker, (1989); Gibson & Guthrie, (1995) also

I. INTRODUCTION

Traditionally business entities are considered to be responsible for their financial performance.
reviewed the environmental reporting practices adopted by Australian corporations and they have concluded that the proportion of corporations which disclose environmental information is increasing across the time, along with the amount of environmental disclosure incorporated within annual reports. Gray & Kouhy,(1995); Chan & Milne, (1999) support previous researchers’ findings and state that, over recent years, the reporting of firms’ impact on the physical environment has dramatically increased. Further Kolk (2000) says that, at present, environmental reporting is becoming more and more common in business.

In addition to that environmental reporting is used to legitimize the current activity of the business entities (Gray, 1993), to make adjustments to the national accounts in order to produce a better instrument for steering the economy (Willums, 2000), to expand corporate accounts to reflect the company’s handling of its environmental and social assets (Willums, 2000), to provide information relating to environmental risk impact of activities to shareholders, lenders and others in the investment community (CICA, 1993), to identify cost savings and new business opportunities (Kolk,2000), to create positive public relationship and to make a company more attractive to customers and investors (Kolk, 2000) to provide information about sustainability (Gray, 2000), Therefore it is cleared a number of research studies emphasis the need for a broader range of social and environmental information to stakeholders.

However, social and environmental reporting practices in developing countries lag behind that of the more developed countries and it has a long way to go in order to meet the increasing demand for environmental information and related international standards (Lodhia, 2000; Belal, 1997; Siddiqui, 2001). It believes that the lack of adequate resources and qualified personnel has contributed to ad-hoc and patchy environmental practices in these countries (Shiraz, 1998). However, environmental reporting awards schemes have been introduced in Asian countries to promote environmental report preparers and to improve quality of environmental reporting practices in the region (SEAJ, 2002).

According to the above facts, it is cleared that stakeholders’ attitudes towards to the environmental protection has increased during the recent years. Thus our intention is to explore the extent of environmental-related disclosure practices of companies in manufacturing industry in Sri Lanka and examine the association between specific attributes including shareholder power, creditor power, government power, environmental concern, ISO 14001 certification award, finance performances, company size, company age and the level of environmental disclosures.

II. SRI LANKAN LITERATURE REVIEW HIGHLIGHTS

During the last few years in Sri Lanka, there was significant increase in stakeholders’ (society’s) awareness of ecological, social and environmental matters, which have been reflected in the proliferation of non-governmental organizations (NGOs) and other social movements. After introducing liberalize open-economic policies in Sri Lanka the late 1970s, many foreign business entities including multi-national companies, and local manufacturing companies have emerged. However such expansion of industrial activities have really contributed to the economic growth of the country, while operations of these factories largely cause damage to the physical environment and ecological balance of the country in numerous ways such as discharging waste material, polluted water and chemicals etc. into the environment.

A survey report of the Central Environmental Authority (CEA) of Sri Lanka (1992) shows, that there were 119 highly polluted factories in Colombo and Gampaha districts. Further in 1992 the Central Environmental Authority (CEA), Sri Lanka revels that business organizations have ‘responsibility’ to comply with the environment which it operates and society has ‘right’ to demand information of social resources which business organizations consume in the operation process, neither they take measures to prevent such environment pollution nor adequately report the damages they cause to the environment within their annual reports or as special reports. Thus they do not concern about environmental damage as it does not appear as a cost to the organization and, there is neither statutory nor professional requirements for environmental reporting in Sri Lanka (Rajapakse, 2003). Consequently, environmental reporting in Sri Lanka is predominantly voluntary, which is also the case in many other developed & developing countries .However, stakeholders’ awareness of environmental impact on industrialization of Sri
Lanka has increased during last few years (Rajapakse, 2003).

However, there is no comprehensive study has been conducted to date to materialize the extent of environmental reporting practices in broader contexts in Sri Lanka. Therefore the main objective of is to examine the level of environmental reporting disclosures of manufacturing sector in Sri Lanka during the selected period.

III. HYPOTHESES DEVELOPMENT

Hypotheses were formulated based on the nature of the relationship to be prevailed between level of environmental disclosures and selected attributes. There could be positive, negative or neutral relationship between the variables, which would be testing in this study. The weight of the arguments about potential positive relationship between level of environmental disclosures and selected attributes is high. Hence in the current study it hypothesizes that the impact of level of environmental disclosures and selected attributes are to be positive. Hypotheses develop under selected attributes are as follows.

Shareholder Power (SP)
Christopher & Hassan, (1996) stated that shareholder power (SP) can be measured by examining the degree of ownership concentration. Most of the foregoing studies suggested that there is a positive relationship between the number of shareholders and disclosure practices in the Annual Reports (e.g. Mckinnon & Dalimunthe, 1993; Malone, Fries and Jones, 1993). These studies imply that wider ownership diffusion is associated with better disclosures. Thus, following hypothesis is developed suggesting the positive relationship.

H1: The level of corporate environmental disclosures is positively associated with No of Shareholders.

Creditor Power (CP)
According to the Roberts, (1992) the creditor power (CP) depends upon the degree to which the firm relies on debt financing. Thus average debt equity ratio is used to measure the creditor power of the firm. Prior studies suggest that the more the firm relies on debt financing, the more likely it will provide more disclosures (Clarkson, Li & Richardson, 2004). Hence, H2 states that:

H2: The level of corporate environmental disclosures is positively associated with Creditor Power (CP)

Government Power (GP)
Elijido-Ten, (2008); suggested that companies belonging to environmentally sensitive industries (ESI) are likely to face more stringent government regulation as these firms are more likely to damage the environment through the use of hazardous substances. Therefore, it is evidence that ESI-firms tend provide more environmental disclosures possibly to get the government approvals for their operations,(Chan & Kent, 2003).The following hypothesis is therefore developed suggesting positive relationship

H3: the level of corporate environmental disclosures of the firms in environmentally sensitive industries is higher than the firms in non-sensitive industries.

Environmental Concern (EC)
Firms with environmental committees and/or environmental concern in their vision/mission statement are considered be as environmental Concern business entities.

H4- the level of corporate environmental disclosures of the firms with environment concern, is higher than the firms without such concern

ISO14001 Certification (ISO)
Business entities are produce CSR information as a partial requirement in order to obtain ISO 14000 for environmental management, which also helps to improve public image. Therefore following hypothesis is developed:

H5: The level of corporate environmental disclosures of the firms that are having ISO 14001 certificate, is higher than the firms that do not have such certification.

Financial Performances
According to Elijido-Ten, (2008); economic performance of the firm is an important factor to consider in determining whether environmental issues will be on the priority list. Further, he argues that the periods of low economic performance, the firm’s economic objectives will be given more attention than environmental concerns. Therefore, it is predicted that the economic performance of the firm is directly related to environmental disclosures. This study uses Return on assets (ROA)
to measure firm financial performance. ROA is calculated as net profit divided by total assets. The sixth hypothesis is formed as follows:

**H6:** The level of corporate environmental disclosures is positively associated with Finance performances of the firm.

**Firm Age**

Owusu-Ansah, (1998); pointed out that the extent of a company’s disclosure may be influenced by its age, stage of development and growth. Further researcher state that three factors that may contribute to this phenomenon. Firstly, younger companies may suffer competition, secondly, the cost and the ease of gathering, processing, and disseminating the required information may be a contributory factor, and finally, younger companies may lack a track record on which to rely for public disclosure. However, it is not possible to reach a conclusion that long-established firms can disclose more information than newly-established firms. Therefore following hypothesis is developed:

**H7:** The level of corporate environmental disclosure is positively associated with firm age

**Firm Size**

Firm size is used to represent the firm capacity to be involved in social and environmental programs and to report such activities. Most researchers in this area find a close relationship between company size and the extent of disclosure, both in developing and developed countries. (example, Singhvi and Desai, 1971; Hossain, 2001). In this body of a research, a positive relationship has been found between company size and the extent of disclosure. A number of reasons have been advanced in the literature in an attempt to justify this relationship on prior grounds. For example, Singhvi and Desai (1971) offered three justifications for the variations in the extent of financial disclosure in firms of different sizes. Firstly, the cost of accumulating certain information is greater for small firms than for large firms. Secondly, larger firms have a greater need for disclosure because their securities are typically distributed via a more diverse network of exchanges, and thirdly, management of a smaller corporation is likely to believe more strongly than the management of a larger corporation, that the full disclosure of information could endanger its competitive position. Thus, the following hypothesis is established.

**H8:** The level of corporate environmental disclosure is positively associated with firm size

**IV. RESEARCH DESIGN**

**Sample and Data**

The sample of this study is included 36 companies listed on Colombo Stock Exchange as at 01st January 2012 under manufacturing category. To determine the level of Environmental disclosure by each company, it is examined the annual reports of the financial year 2010/2011

**Model development**

The following Ordinary Least Square (OLS) regression model is conducted to identify the association between firms’ specific attributes, viz. Shareholder Power (SP), Creditor Power (CP), Government Power (GP), Environmental Concern (EC), ISO14001certification (ISO), Return on Assets (ROA), Size (Lsiz), Age (Age) and level of environmental disclosure.

\[ Y = \beta_0 + \beta_1 SP + \beta_2 CP + \beta_3 GP + \beta_4 EC + \beta_5 ISO + \beta_6 ROA + \beta_7 Lsiz + \beta_8 Age + e \]

Where: \( Y \) = total disclosure score received for each firm  
\( \beta_0 \) =the intercept;  
\( e \) = the error term

**IV. RESULTS AND ANALYSIS**

**Level of disclosure**

Descriptive statistics are shown in Table 1. Shareholder power (SP) has a minimum of 12.29%, maximum of 97.63% and a mean(median) of 72.04% (74.79%) representing that majority of the firms in the sample have high ownership concentration. The creditor power (CP) has wide range from a low of -5436.35% to high of 192.98%. The mean of creditor power is shown negative figure as -129.30% which is due to an outlier, while median of 12.67% of creditor power is indicating low level gearing of firms in the manufacturing sector. It is clear that majority of the manufacturing firms in Sri Lanka are less geared. More than 80% of firms in the sample are in environmentally sensitive industry (GP = 1) but only three firms in the sample show environmental concern (EC) in their Vision, Mission statement or have an environment committee. About 12% of firms have received ISO 14001 certification, however the companies with ISO
14001 certification have not shown considerable environmental concern. The minimum return on assets (ROA) is 45.35% while maximum is 44.48%. The age of the sample firms are range from a minimum of 10 years to maximum of 71 years with the mean of 31.03 years.

Table 01: Descriptive Statistics

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<td>0.47</td>
<td>-</td>
<td>1.00</td>
</tr>
<tr>
<td>EC</td>
<td>0.08</td>
<td>-</td>
<td>0.28</td>
<td>-</td>
<td>1.00</td>
</tr>
<tr>
<td>ISO</td>
<td>0.14</td>
<td>-</td>
<td>0.35</td>
<td>-</td>
<td>1.00</td>
</tr>
<tr>
<td>ROA</td>
<td>6.85</td>
<td>6.71</td>
<td>14.85</td>
<td>(45.35)</td>
<td>44.48</td>
</tr>
<tr>
<td>ALS</td>
<td>8.54</td>
<td>8.91</td>
<td>1.26</td>
<td>5.74</td>
<td>9.89</td>
</tr>
<tr>
<td>Age</td>
<td>31.03</td>
<td>28.50</td>
<td>13.79</td>
<td>10.00</td>
<td>71.00</td>
</tr>
</tbody>
</table>

Note- Total Score (TS), Shareholder Power (SP), Creditor Power (CP), Government Power (GP), Environmental Concern (EC), ISO14001 certification (ISO), Return on Assets (ROA), Assets Log Size (ALS), Age (Age)

Regression Result
We performed an Ordinary Least Square (OLS) regression model for all variables, the results of which are presented in Table 2. The multiple regression model is significant at 5% level. The adjusted coefficient of determination (Adjusted R squared) indicates that 45% of the variation in the dependent variable is explained by variations in the independent variables. The coefficient representing environmental concern (EC) and ISO 14001 certification (ISO) are statistically significant between 1% to 5% level, while the coefficients for shareholder power, creditor power, government power, return on assets, size and age are not statistically significant at 10%.

Table 02: Model Summery

<table>
<thead>
<tr>
<th>Multiple R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.763324998</td>
<td>0.58266505</td>
<td>0.459010253</td>
</tr>
</tbody>
</table>

Discussion of Regression Results
As depict in table 03, the shareholder power and creditor power variables are not significant. A similar result was found in Evangeline Eljiido-Ten (2003). This implies that the level of disclosure is not affected by the shareholder power and creditor power of the manufacturing firms. The firms with environmental concern in their vision/mission statement and/or environmental committee tend to disclosure more information about environmental activities in their annual reports. Further firms with ISO certification disclosure more environmental information than firms with no such certification. These results are in line with the result from previous research as mentioned. Size by assets is not statistically related to the level of information disclosed by the sample of manufacturing firms in their annual reports. Age and Return on Assets are not significant. This also implies that the level of environmental disclosure is not affected by the age of the firms or the number of years it has in business and profitability of firms.

Table 03: Results Regression Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficients</th>
<th>SE</th>
<th>T Stat</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>7.1000</td>
<td>7.4316</td>
<td>0.9554</td>
<td>0.34787</td>
</tr>
<tr>
<td>SP</td>
<td>0.0007</td>
<td>0.0588</td>
<td>0.0127</td>
<td>0.98993</td>
</tr>
<tr>
<td>CP</td>
<td>0.0008</td>
<td>0.0011</td>
<td>0.7384</td>
<td>0.46667</td>
</tr>
<tr>
<td>GP</td>
<td>(1.2013)</td>
<td>2.1285</td>
<td>(0.5644)</td>
<td>0.57715</td>
</tr>
<tr>
<td>EC</td>
<td>7.5359</td>
<td>3.5417</td>
<td>2.0764</td>
<td>0.04750**</td>
</tr>
<tr>
<td>ISO</td>
<td>14.7764</td>
<td>2.9620</td>
<td>4.9886</td>
<td>0.00003**</td>
</tr>
<tr>
<td>ROA</td>
<td>(0.0570)</td>
<td>0.0714</td>
<td>(0.7973)</td>
<td>0.43225</td>
</tr>
<tr>
<td>ALS</td>
<td>(0.0867)</td>
<td>0.7809</td>
<td>(0.1111)</td>
<td>0.91239</td>
</tr>
<tr>
<td>Age</td>
<td>(0.0572)</td>
<td>0.0763</td>
<td>(0.7502)</td>
<td>0.45962</td>
</tr>
</tbody>
</table>

** Significant at 5% level

VI. CONCLUSION AND LIMITATION
This study has examined the level of environmental disclosures of Sri Lankan manufacturing firm. Further it is investigated whether level of environmental disclosures are affected by the firms’ specific attributes such as shareholder power, creditor power, government power, environment concern, ISO 14001 certification, return on assets, size and age. The result indicated that the level of environmental disclosures by Sri Lankan manufacturing firm is at a very low level.

From the analysis described in the previous section, it is apparent that environmentally sensitivity does not affect the level of environmental disclosure by Sri Lankan manufacturing firms. This is unlike with previous studies. Many previous studies have found that there is association between the level of environmental disclosure and environmentally sensitivity. This study also provides evidence of the lack of environmental disclosures in the absence of mandatory requirements to do so. This should give
an implication to the accounting regulatory body in considering mandatory environmental disclosures.

Some limitations of this study are also inevitable. A one year period of observation might not be sufficient to get a comprehensive picture of the level of environmental disclosures by the manufacturing firm in Sri Lanka. Other variables which may affect to the level of environmental disclosure, such as media coverage, firm reputation and auditor, have not been included in the model. Media coverage variable is particularly widely used in the previous literature. By adding more independent variables, we would probably be able to increase the power of the regression model and hence a better explanation to the level of environmental disclosures. This study limits its data source to corporate annual reports in calculating environmental disclosure level, whereas environmental information may be disclosed by companies in other media, such as press releases, websites, and separate environmental reports. We expect that these information sources may not be significant in Sri Lankan context, and therefore excluding them from analysis would not result in some data selection bias.

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Abstract—Univariate time series analysis under the time domain has become a widely used data analysis technique from the past. The methods belong to time series could be used to identify the temporal structure of data and forecasting. Among them Box and Jenkins approach has been used in the research studies and could be rendered as the commonly used method. Accordingly, they have introduced a model to predict the future behaviour through an auto-projective method that uses the past behaviour of the series.

The purpose of this study is to obtain accurate out-of-sample forecasts for stock price indices using an ARIMA model. The daily All Share Price Indices (ASPI) were used over the period from 2nd January 2012 to 31st December 2013 in Colombo Stock Exchange (CSE), Sri Lanka. This study used Box-Jenkins method with four main concepts of model identification, estimation, diagnostic checking and forecasting.

Basically, the concept of information criteria was used for the model identification process. The corresponding model Parameters were estimated at the training data sample using the least square method. Moreover, residual plots and residual tests were used to check the model diagnosis. Finally, different error approaches such as mean absolute error (MAE), root mean square error (RMSE), and mean absolute percent error (MAPE) were used to evaluate the forecast performances of the selected models through different time horizons.

Two models were chosen according to the results of Akaike’s information criterion (AIC), Schwarz’s Bayesian information criterion (SBIC), and Hannan-Quinn criterion (HQIC.) The out-of-sample forecasting indicates that the selected two models are appropriate for one step ahead forecasting than the long time horizon. The aggregate results depicted that; ARMA (1, 1, 0) is the optimal model and can produce more accurate result than ARIMA (4, 1, 5) for ASPI data within the considered time period.

Keywords—Box-Jenkins method, ARIMA, Forecasting

I. INTRODUCTION

In contrast to the structural models, time series models are different in the model building process by capturing important behaviours of observed data. Beyond that, univariate time series modelling is quite important when the explanatory variables are not available. Among the many methods of forecasting a time series, Box and Jenkins approach has been widely used in research studies and could be rendered as the commonly used method. According to the approach, they introduced a model to predict the future behaviour through an auto-projective method which uses the past behaviour of the series. The corresponding basic model is simply known as ARMA; Autoregressive Moving Average (Box & Jenkins, 1970). It's an important class of model is known as ARIMA; Autoregressive Integrated Moving Average after converting level data into its first difference series.

As a linear statistical model, ARIMA is important to capture the linear features of the past and current observations. According to that, the future value of the series is assumed to be a linear combination of three components: auto-regression (AR), integration (I), and moving average (MA). The corresponding model can be denoted as ARIMA (p, d, q), where p is the number of auto-regression terms, d is the number of non-seasonal differences, and q is the number of lagged forecast errors (Box & Jenkins, 1970; Wang et al., 2012).

Many studies have used ARIMA models to analyse time series data and shown that they obtained the best results comparative to some of the other
traditional models. For instance, Ho et al. (1998) investigated repairable system reliability forecasting based on the ARIMA models under the Box-Jenkins methodology. They followed the ARIMA model and the comparison has been made with the traditional Duane model. The corresponding results pointed that ARIMA model is a viable alternative based on its predictive performance. Sharma et al. (2009) adopted Box-Jenkins method for forecasting the ambient air quality data of Delhi City. In their study, several models were developed based on ARIMA and the evaluation statistics showed that the suggested Box-Jenkins approach is satisfactory in the forecasting process. Moreover, they mentioned that the developed models could be used to provide short-term, real-time forecasts of extreme air pollution concentrations.

Jayasinghe and A. Kankanamge (2011) attempted to forecast ASPI using univariate time series techniques with a time trend component. ARMA (1, 1) was selected as the optimal model with the quadratic time trend. Based on one week ahead forecasting results, they showed that a simple ARMA model with a time trend component can be used to produce a reasonably good forecast among many other time series models. In addition Rathnayaka et al. (2014) did a sector wise data analysis on basis of ARMA models. Among the several, ARMA (1, 1) and ARMA (1, 0) were selected as best fitted models for different set of sectors.

Some researchers have concentrated to identify the patterns in the stock prices and forecasting. For example, Herrmann (1980) used the Box-Jenkins approach to determine whether or not the buffer stock policy under the 1980 International Cocoa Agreement stabilized world market prices. Under his methodology, ARIMA models were estimated and used in the forecasting process to fulfill their expectations. Besides, some researchers have attempted to make comparisons of the forecasting ability of ARIMA with the other models. For instance, one study was done by Koch et al. (1994) for forecasting stock returns in Japanese, UK and US markets during the Crash of October 1987. In this case, an ARIMA model was used along with a simultaneous equation model. The empirical results pointed out that neither type of models accurately forecasts the sharp changes in the market indices around the crash. Another comparison was made by Stevenson (2007) by examining ARIMA models in the context of rent forecasting data for the British office markets. Based on the results, the study depicted that the ARIMA models are useful in anticipating broad market trends, but there are substantial differences in the forecast obtained using alternative specifications.

On basis of the previous studies, it can be concluded that an ARIMA model is useful to find the important features of the observed data as well as suitable to make the best forecasts for some sort of time series data. Beyond that, more steps and methods might be required to analyse particular situations. In our study, we attempt to find a suitable ARIMA model for out-of-sample forecasting. The recently published daily All Share Price Indices (ASPI) data are considered over the period from 02nd January 2012 to 31st December 2013. The present study uses Box-Jenkins (1970) method in accordance with four concepts that the model identification, estimation, diagnostic checking and forecasting. Initially, the selected sample is categorized as training and testing according to the ratio 0.85:0.15 and the training data sample is used for the process of model building. Then, the out-of-sample forecasting is carried out to all the selected models. Finally, the optimal model is selected based on the performance of mean absolute error (MAE), root mean square error (RMSE), and mean absolute percent error (MAPE).

The paper is organized as follows. Next section briefs describes the basic concepts of the Box-Jenkins methodology for ARIMA forecasting. Section three employs ASPI data to check the appropriateness of ARIMA forecasting through the empirical results. The conclusion and future research directions are rendered in the final section.

II. BOX-JENKINS METHODOLOGY

The methodology consists of four components: model identification, parameter estimation, diagnostic checking and forecasting.

A. Model Identification

In the model identification process, an important as well as the initial step is to determine the stationary of the series. If not, the results of the study might be spurious based on the influence of its chaotic behaviours. It can be two types which are trend stationary and difference stationary based on the process of converting a non-stationary series into a
stationary series. However, the types of stationarity can be tested by using the behaviour of a correlogram (acf plot), which is based on autocorrelation. As well as unit root tests based on the unit root such as Augmented Dickey-Fuller (ADF), Phillips-Perron (PP) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS).

1) Autoregressive Integrated Moving Average Model (ARIMA): If a time series does not show any other seasonal or cyclical behaviour, the stationary series can be used to determine the order of the autoregressive terms (AR) and moving average terms (MA). For this, we can use both autocorrelation function (acf) and partial autocorrelation function (pacf) by judging the corresponding acf and pacf plots. In addition, alternative techniques such as information criteria can be used along with the graphical plots. There are mainly three information criteria such as Akaike’s information criterion (AIC), Schwarz’s Bayesian information criterion (SBIC), and Hannan-Quinn criterion (HQIC).

Based on the preliminary analysis, if we select a model as ARIMA (p, d, q), then the stationary, invertible, mixed autoregressive moving average process can be written by the equations 1 as follows:

\[ v_t = \sum_{i=1}^{p} \phi_i v_{t-i} - \sum_{j=1}^{q} \theta_j v_{t-j} + \alpha_t \]  

Where \( v_t \) is the \( d^{th} \) difference of the original series, \( \alpha_t \)’s are independent random variables, \( \phi_i \)'s and \( \theta_j \)'s are structural constants for the system (Box & Jenkins, 1970; Box & Pierce, 1970).

B. Parameter Estimation of ARIMA Model

After specifying the suitable model, Parameter estimation methods can be applied to estimate the Parameters. Several estimation methods are available in the literature such as least square method and maximum likelihood method (Maddala, 2001).

C. Diagnostic Checking

The adequacy of the constructed model can be figured out based on the residuals. Initially, the residuals should be checked for the evidence of autocorrelations using its acf and pacf plots for white noise. Then, the tests of residuals are able to use for diagnostics. Under the residual diagnostics, Box-Pierce or Q statistic, Box-Ljung (or Modified Box-Pierce) statistic, Durbin-Waston statistic and Lagrange Multiplier tests have been presented in the theory (Brooks, 2008; Maddala, 2001).  

D. Forecasting Performance

Forecasting is the final step of the Box-Jenkins method. It can be functioned for one-step ahead or multi-step ahead forecasting horizons. The evaluation of the forecasting values is based on the common performance measures such as mean absolute error (MAE), root mean squared error (RMSE), and mean absolute percent error (MAPE) given by the equations 3, 4 and 5 as follows:

\[ MAE = \frac{1}{T} \sum_{t=1}^{T} |\epsilon_t - \hat{\epsilon}_t| \]  

\[ MSE = \frac{1}{T} \sum_{t=1}^{T} (\epsilon_t - \hat{\epsilon}_t)^2 \]  

\[ MAPE = \frac{1}{T} \sum_{t=1}^{T} \left| \frac{\epsilon_t - \hat{\epsilon}_t}{\epsilon_t} \right| \]  

Where \( \epsilon_t \) and \( \hat{\epsilon}_t \) are actual and predicted values at time \( t \), \( T \) is the number of observations. Since all the measures are rendered as the deviation between actual and predicted values, the model with the better forecasting results can be chosen based on the minimum values of MAE, MSE and MAPE.

III. EXPERIMENTATION DESIGN AND EMPIRICAL RESULTS

A. Data

The purpose of this study is to find a suitable ARIMA model for out-of-sample forecasting using short time period of historical data. For this, we use recent daily ASPI index in Colombo Stock Exchange (CSE), Sri Lanka over the period from 2nd January 2012 to 31st December 2013. The sample consists of 484 values and the first 411 values (about 85% of the sample) are allocated as in-sample (training sample) and the remaining 73 values are considered as the out-of-sample (testing sample). To enhance the accuracy of the results of the analysis, we use logarithms of the original data series based on the homoscedasticity. The corresponding time series plot of logarithm ASPI (run sequence plot) is shown in Fig. 1.

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B. Empirical Results

In this study, Eviews 6 and Minitab statistical packages were used in the process of modelling and forecasting. Initially, a run sequence plot was examined to see whether there is any trend or seasonal components in the data series. The Fig. 1 shows the run sequence plot and it reveals that there is not any significant trend or obvious seasonal pattern in the data.

Next, stationary of the series was tested by using acf plot and the unit root tests. The corresponding results are displayed in Fig. 2 below.

Figure 2. Daily logarithmic data of ASPI

According to the Fig. 3, we can see that all the autocorrelations lie between the bounds except the autocorrelation at lag 1.

Table 2. Results of unit root tests

<table>
<thead>
<tr>
<th>Test</th>
<th>ADF</th>
<th>ADF (p-value)</th>
<th>Trend &amp; Intercep t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SBIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HQIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADF (p-value)</td>
<td>Level</td>
<td>0.4512</td>
<td>0.1877</td>
</tr>
<tr>
<td></td>
<td>1&lt;sup&gt;st&lt;/sup&gt; difference</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>PP (p-value)</td>
<td>Level</td>
<td>0.3792</td>
<td>0.1432</td>
</tr>
<tr>
<td></td>
<td>1&lt;sup&gt;st&lt;/sup&gt; difference</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>KPSS (LM-stat)</td>
<td>Level</td>
<td>1.4271</td>
<td>0.2065</td>
</tr>
<tr>
<td></td>
<td>1&lt;sup&gt;st&lt;/sup&gt; difference</td>
<td>0.1650</td>
<td>0.1116</td>
</tr>
</tbody>
</table>

Based on the ADF and PP test results in Table 2, it can be pointed that the non-rejection of null hypothesis at the level and the rejection of the null hypothesis at the corresponding first difference. Therefore, it can be confirmed that the first difference is required to make the level data into stationary for ASPI series. KPSS test helps decide that the necessity of trend or difference operation to convert the data into stationary series. The corresponding KPSS test result shows the rejection of the null hypothesis of trend stationary for the logarithms of ASPI series. The overall result reveals that the first difference of the series can make the data stationary.

Then, the stationary series was used to identify the suitable models estimated their parameters. Table 3 gives the values of AIC, SBIC and HQIC of the models for ARIMA (0,0) to ARIMA(5,5).
Table 3. Information criteria for ARIMA model selection for daily logarithmic ASPI data

<table>
<thead>
<tr>
<th>p / q</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-6.805</td>
<td>-6.801</td>
<td>-6.791</td>
<td>-6.794</td>
<td>-6.796</td>
<td>-6.8036</td>
</tr>
<tr>
<td></td>
<td>-6.7896</td>
<td>-6.7785</td>
<td>-6.7681</td>
<td>-6.7569</td>
<td>-6.7547</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-6.7956</td>
<td>-6.7903</td>
<td>-6.7858</td>
<td>-6.7806</td>
<td>-6.7843</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>-6.8003</td>
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<td>-6.8072</td>
<td>-6.8324</td>
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</tr>
<tr>
<td></td>
<td>-6.7870</td>
<td>-6.7719</td>
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<td>-6.7679</td>
<td>-6.7671</td>
<td>-6.7322</td>
<td>-6.7668</td>
</tr>
</tbody>
</table>

Accordingly, two models were selected on basis of the minimum values of information criteria and the significance of the parameters. They are ARIMA (1, 1, 0) and ARIMA (4, 1, 5) respectively.

The adequacy of the selected models was tested through some graphical techniques based on the assumptions of the residuals and some statistical tests. Fig. 4 represents the four plots of residuals based on the ARIMA (4, 1, 5). The normal probability plot and the histogram indicate that an adequate fit of the model provide by the normal distribution. Residual vs. fits plot in Fig. 4: shows that the residuals are well behaved around zero and indicates that the variance of the residuals is equal. The run sequence plot shows that most of the residuals are scattered in the same range and proves that the assumptions of common location and common scale.

Accordingly, one step ahead forecast gives more...
accurate results than the other forecast horizons. Moreover, ARIMA \((1, 1, 0)\) model gives the optimal one day ahead forecast than ARIMA \((4, 1, 5)\).

**IV. CONCLUSION**

In the present study, Box-Jenkins methodology was used to find the suitable ARIMA model for out-of-sample forecasting using a short period of time. For this, recent two years of daily ASPI data was employed. Basically, the concept of information criterion was used to identify the appropriate models and then the error measures were used to find the better forecasting results.

Based on the results, we can suggest that the two ARIMA models are more suitable for one step ahead forecasting. This result is similar to the conclusion of the study (Sharma et al., 2009) and they also pointed that the ARIMA models could be used to provide short-term forecasting. The aggregate results of our study depicted that; ARMA \((1, 1, 0)\) is the optimal and can produce the most accurate result than ARIMA \((4, 1, 5)\). Based on the overall result, it can be suggested that the used Box-Jenkins approach is sufficient for obtaining satisfactory short term forecast.

The conventional ARIMA model can effectively capture the linear components of the series. Generally, stock prices are chaotic and show both linear and nonlinear behaviours. Therefore, the accuracy of forecast might be enhanced by modelling the non-linear behaviours of the series as well. Therefore, further modifications could be included to the selected model to enhance the accuracy of the forecast. Further, the accuracy of ARIMA forecasting can be evaluated by comparing with forecasting results of other linear and non-linear models.

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Risk Analysis of Governance in Community Development Projects

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Abstract - Governance in a community development project could be referred as a process of decision making in order to achieve expectations, and management goals. The good governance ensures transparency in decision making and accountability. Governance in community development projects must achieve their set objectives which focus on the government is national development policy agenda. These projects had been identified five risk areas: financial, institutional, procurement, grievance and communication. This study analyzed the risk areas of “Gemidiriya” project in order to bridge the prevailing gap in empirical information. The study aims at administrative risk areas of community development projects, determining the success level of governance while identifying the relationship between risk areas assigning values to qualitative features to give a quantitative facet. Primary data were collected from a sample of 150 employees of the community development and livelihood improvement project through a field survey by the researcher playing the role of participant as observer. The study used the stratified random sampling method as the population of 500 employees had been divided into more relevant and significant strata based on their position. Reliability of the questions was listed and that was high (0.87). The structured interviewed type of questionnaire were administered for nearly three months to collect data. The correlation analysis showed that there was a strong positive relationship between financial risks and procurement risks. Overall, finance risks and procurement risks were above the expected level but communication, grievance and institutional risks were below the expected level due to weakness in disclosure policies, poor communication progress and absence of proper grievance handling mechanism. It is recommended that the necessity of trained staff whom should also have a sound working environment free from political intervention. The appraisals and compliance handling should be done by an independent team.

Keywords: Governance, Risks, Community development

I. INTRODUCTION

Community development projects mainly focus on economic and social empowerment while supporting to eradicate poverty. These projects are closely supervised by the Ministry of Economic Development and mainly funded by the World Bank.

Divineguma is one of the such community development projects started with the initial funding assistance of US$51 to empower the beneficiary communities providing resources, enabling them to make their own decisions and improving their competencies through skills, technology and information in order to improve the economic and social well-being of under privileged societies. This project was implemented under three phases. In the first phase, 1000 villages were expected to be covered by 1034 village organizations in about 816 Grama Niladhari divisions. It could be noted that this project was managed by decentralized system as these projects were supervised at the village level by the village organizations consisting a few office representatives of these villages.

Governance and accountability mechanism were implemented in these projects from the lessons learnt from the previous community development projects in order to achieve the objectives of Second Community development and Livelihood project. According to the Annual Report in 2011 issued by the Ministry of Economic Development, a specific assessment of the governance identified the following five risk areas.

a. Malfunctions in Project management level Governance system (Institutional).
b. Financial management weaknesses (Finance).
c. Irregularities in procurement and assets management (Procurement).

d. Weaknesses in disclosure policies and procedures poor communications (Communication).

e. Ineffective complaint and grievance redress mechanism (Grievance).

A. Problem Statement

Even though Governance and Accountability Mechanism had been already established, there was no reported evidence on the stated five risk areas. One of the major problems in community development programs is that there are many assessments, feasibility studies and planning in community development projects, but at the time of implementing, there is no specific evaluation process adopted to find the validity of the project. Among the identified risks only two risks: Finance and Procurement, have been achieved the targets but not the rest of three. Therefore, this paper finds out reasons why the other three risks were below the expected level. The main objectives of the study are;

1. To examine problem areas in the governance of the project.
2. To identify the relationship between each other risk areas.

This paper will help the project representatives, Government of Sri Lanka and the World Bank to minimize the inefficiencies in the process of governance while showing the reasons for the other three risks areas were below the expected level. This knowledge and guidance will be able to use for the forthcoming community development projects in the country.

II. LITERATURE REVIEW

The prevailing government emphasis good governance practices giving more opportunities to the general public to involve in decision making process in community development projects like Gemidiriya. As found evidences from literature, it could be noted that active participation of stakeholders of these projects are essential to address the burning issues of these communities. Thus, stakeholders should be empowered through good governance establishing decentralized institutions at the village level increasing the engagement level of the villagers in these projects.

A. Governance

The concept of “governance” is as old as human civilization. Governance simply means the process of decision making and the process by which decisions are implemented (or not implemented). Governance can be used in several contexts such as corporate governance, international governance, national governance and local governance (UNESCAP, 2013). Governance could be defined as a process of making decisions which define the expectations, systems and management, in this case, of a neighborhood (Kumara & Karunasekara-2014). It is influenced by authorized institutions in order to deliver services to an area and should also be shaped by communities. Governance can be a collective activity that is entered into by those whose lives are affected by the decisions that are made. Not only this, but through their positive contributions to the life of their community, people living there are able to shape the community in a way that suits them.

Bergh (2004) indicates that decentralization is a major point of discussion on the topic of good governance. From the point of view of ‘good governance’ devolution has many functions such as being a mode of administration that advocates bottom-up planning which captures, internalizes and addresses local needs and concerns. As such, it promotes responsiveness and accountability of policy makers to local needs and people. The administrative dimension undertakes to transfer the responsibility of functions from a central agency to one or more of its lower levels such as a state corporation.

Even though governance is very helpful for the success of any organization from small local organizations to large international organizations (Kumara, and Karunasekara, 2014) it is a group decision-making that addresses shared problems. Thus, governance considers on future directions and long-term strategic consideration which addresses the issues of policy in relation to internal programming (Tandon, R, 1991). Governance is a decision making processes, policy formulation and implementation capacity, development of personnel, information flows and the nature and style of leadership (Ogundia , I, 2010). Contemporary theories on governance make a fundamental distinction between governance and government. Further, the fundamental point is if it is appropriate to even propose a universal of governance principle. Some argue that emphasis
given on different aspects of governance may differ in different settings as societies value outcomes differently. (Graham,J, 2003).

Governance is a broader concept than government. Governments have the formal authority to act. They also have powers to enforce compliance with their activities, rules, and policies. In particular, governments have, and exercise, police power. In contrast, the broader concept of governance describes the way in which an organization chooses to engage in certain activities backed by goals shared by its constituents. Often, these activities do not derive from legal or formal responsibilities of the organization. Unlike governments, international organizations do not possess police power to enforce compliance with their activities, rules, and policies (Kumara, and Karunasekara, 2014). It does not mean that international organizations have no power to require compliance and their power differ from those of national or local governments. For instance, the World Bank can suspend a loan to a borrowing country that has deviated from the terms of its loan agreement with the Bank. The various theories of governance observe the difference between the concepts of governance from government (Lee,H ,Enrique,R and Carrington,W, 2008).

III. METHODOLOGY

The main objective of this study is to analyze risks of governance in community development projects. Independent and dependent variables as stated in the conceptual framework have been taken into account. The framework had been tested in many community development projects in the world wide and was used for this study as well.

A. Conceptual Framework

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malfunctions in Project Management Level Governance systems.</td>
<td>I. Risk</td>
</tr>
<tr>
<td>Financial management weaknesses.</td>
<td>F. Risk</td>
</tr>
<tr>
<td>Irregularities in procurement and assets management</td>
<td>P. Risk</td>
</tr>
<tr>
<td>Weaknesses in disclosure policies and procedures and poor communication</td>
<td>C. Risk</td>
</tr>
<tr>
<td>Ineffective complaint and grievance redress mechanism.</td>
<td>G. Risk</td>
</tr>
</tbody>
</table>

B. Calculating Risks

To analyze risks of governance of community development projects, the following formula which was introduced by Secondary Community Development and Livelihood Project in 2009 has been used in this study.

Risk Score = Likelihood *Consequences

(SCDLIP Manager.Government authorities, 2009)

It should be highlighted that the governance and the other elements in the formula are qualitative factors therefore, it has been assigned values according to the Project Appraisal report in 2009.

Risk scores or levels are dependent variables, the decisions would be taken according to the standard risks sores as stated the following table.
Table 01: Standard risk scores

<table>
<thead>
<tr>
<th>Risk, Assessment Scores Received</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 06</td>
<td>Risk is Low</td>
</tr>
<tr>
<td>Between 08 – 12</td>
<td>Risk is Moderate</td>
</tr>
<tr>
<td>Between 14 – 20</td>
<td>Risk is High</td>
</tr>
<tr>
<td>More than 20</td>
<td>Risk is Top</td>
</tr>
</tbody>
</table>

Source- Project Appraisal Report-2009

The weightage of the other two elements are as follows.

Table-02: Weightage of the elements

<table>
<thead>
<tr>
<th>Decision</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likelihood</td>
<td>Consequence</td>
</tr>
<tr>
<td>Very high</td>
<td>5</td>
</tr>
<tr>
<td>High</td>
<td>4</td>
</tr>
<tr>
<td>Medium</td>
<td>3</td>
</tr>
<tr>
<td>Low</td>
<td>2</td>
</tr>
<tr>
<td>Very low</td>
<td>1</td>
</tr>
</tbody>
</table>

Source- Project Appraisal Report-2009

C. Population And Sample

It was taken almost three months to collect data from the relevant project staff using a structured questionnaire. Primary data were collected from a sample of 150 employees of the community development and livelihood improvement project through a field survey by the researcher playing the role of participant as observer. The study used the stratified random sampling method as the population of 500 employees had been divided into more relevant and significant strata based on their position.

D. Success Level Of Govenance

The figure 1 shows that the level of success against the employee category. Employees were categorized from the top to bottom management level,( I-IV: Top/ V-IX: Middle/X-XIII-Lower). The 3rd category employees show the highest progress level in procurement and the least progress level in grievance redress system. Even though progress level of finance and procurement were at satisfactory level in all employee categories, it was not in the 3rd and the 11th employee category.

Figure 1: Success level of governance vs Employees Category

Source- Project Appraisal Report-2009

The figure 2 shows that only risks areas namely finance and procurement have been achieved the expected level of the donor of the project (The World Bank). This study finds out the reasons for not achieving the expected level by the rest of the three risks areas. Level of success in institutional, communication and grievance redress system of employees in all categories were lower than the expected level.

Figure 2: Policy Maker Success level of governance

Source- Project Appraisal Report-2009
IV. DATA ANALYSIS

As the structured questionnaire was used in this study, the reliability of the questionnaire was tested and the value of Cronbach alpha was .87. Therefore it is very much fitting to the study as well.

A. Relationship among Risks Areas

As depicted in the table 3, the relationship among the dependent variables or risks areas identified by the project appraisal report in 2009, is shown with the coefficients correlation of variables related to Gemidiriya project. Institutional risk is positively correlated with finance risk and procurement risk. This means that malfunctions in project management effect to weaken financial strength and to have irregularities in procurement & assets management of the project. Financial risk and procurement risk are highly positively correlated with 0.970 at 0.01 significant level. This means that weakness in financial management strongly effect to have irregularities in procurement and assets management. Grievance risk and institutional risk are the most weakly correlated risks as ineffective complaint handling and grievance redress mechanism does not lead to have malfunctions in project management level and vice versa.

<table>
<thead>
<tr>
<th>Variables in Conceptual Model</th>
<th>Institutional Risk</th>
<th>Finance Risk</th>
<th>Procurement Risk</th>
<th>Communication Risk</th>
<th>Grievances Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pearson Correlation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

B. Problem Areas in the Governance of the Gemidiriya Project

As indicated in graphs 1&2, communicational, Grievance risks and institutional risks did not reach to the level that had been expected by the World Bank as the main donor of the project. Financial risks and procurement risks are not significant at 5% level. However finance risk increases by one unit keeping the other factors constant the total risk will decrease by 4.049 while one unit in procurement is increased keeping other factors constant the total risk will increase by 10.215. Even though financial risks and procurement risks are positively correlated, they have an opposite relationship with the total risks. Goodness of fit of the model is high as adjusted R2 is 0.68. It means that 68% of the variation in the total risk is explained by the variation of five risks.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-5.404</td>
<td>2.660</td>
<td>-2.032</td>
<td>.044</td>
</tr>
<tr>
<td>Institutional Risk</td>
<td>6.075</td>
<td>.970</td>
<td>.062</td>
<td>1.287</td>
</tr>
<tr>
<td>Finance Risk</td>
<td>-4.049</td>
<td>8.580</td>
<td>-0.091</td>
<td>-0.472</td>
</tr>
<tr>
<td>Procurement Risk</td>
<td>10.215</td>
<td>8.248</td>
<td>.237</td>
<td>1.238</td>
</tr>
<tr>
<td>Communicatio n Risk</td>
<td>4.733</td>
<td>.616</td>
<td>.379</td>
<td>7.687</td>
</tr>
<tr>
<td>Grievances Risk</td>
<td>6.003</td>
<td>.488</td>
<td>.588</td>
<td>12.30</td>
</tr>
</tbody>
</table>

a. Dependent Variable: TR
Table 5: Model Summary

<table>
<thead>
<tr>
<th>Mode</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.833a</td>
<td>.694</td>
<td>.683</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), G Risk, I Risk, F Risk, C Risk, P Risk

V. CONCLUSION AND RECOMMENDATION

As the project functioned under a decentralized management system, most of the project funds had flown directly from the Foundation to the Village Organizations comprising the villagers who were empowered to decide on use of these funds for their benefit. Therefore, the citizens themselves were responsible for using the project resources for improving their livelihood, and the state accountable for delivery of services to citizens was marginal. Resource use efficiency was monitored by Social Audit and Procurement Committees. The participatory processes and social accountability did not eliminate the risks of political intervention and collusion in the use of project funds and community resources. Even though it was stated on governing values to have good practices in the areas of project management, community organizing and corruption control this was not practiced. The study found that members on the staff of the project were not caliber enough to do their duties and responsibilities, full of stress, poor quality of staff training, supervision staff not visiting the field and/or submitting inaccurate reports; poor target setting, communications between HQ and field office are not effective, frequent changes in rules and procedures and bureaucratic interference in project functioning. Therefore institutional risks were below the expected level. Thus, the appraisal and compliance handling teams of the projects should be separated from the facilitation teams ensuring independent checking on compliance with the village level governance systems. The other two risks below the expected level were communication risks and grievances risks. The study was able to find that there was no proper mechanism to resolve conflicts and to handle grievances. Thus, there should be a system for independent inquiry, reporting and lessons drawing and dissemination process. This complaints and grievance process is supported by formal and informal sanctions against individual wrongdoing and neglect of duties and against communities for nonperformance.

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**BIOGRAPHY OF AUTHOR**

Author is a product of Bandarawaththa Parakkrama Maha Vidyalaya- Gamapaha and now is working a professional researcher in the field of tourism. His research interests include entrepreneurship, project management, tourism and International Business. He has produced nearly 10 referred international and local Journal publications to his credit. He is a member of Association of Business Executives and Association of Charted Management Association in the UK. Author is reading his PhD at University of Kelaniya, Sri Lanka.
Perception on Credit Cards for E-Payments in E-Government Service in Sri Lanka

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Abstract— In competitive and complicated context, people look for quick, short and quality services. Government as well needs to provide competitive services by integrating new technologies. In an e-government, a solid and trusted environment is a pre-requisite to ensure the trustworthiness of the payee for the paying bills especially utilities, in fostering payment especially through electronic media. The expansion of the Internet has facilitated the attractiveness of this payment instrument. E-commerce and e-government have created new financial needs that in many cases cannot be effectively fulfilled by traditional payment systems. There are plenty of electronic payment systems. Among them, credit card has popularized for paying bills in Sri Lanka.

The research question is ‘Are there any potential to use these trends as an imperative means for e-payments in an e-government services in Sri Lanka?’ The paper aims to examine perception of credit cardholders on using credit cards for e-payment in e-government services through an exploratory inquiry. The literature related to the present investigation is used to develop a framework for the study. Data was collected from a sample of 150 credit card holders in Colombo district and used quantitative method. Result reveals that behavioural elements of credit card holder’s perception on credit card for e-payment have significant influence on their perception about e-payment through credit cards. Sri Lanka is moving toward greater e-government adoption interestingly. Accordingly e-payment means also should be taken into consideration, majority of online population in Sri Lanka is yet considered "infants" with a shallow level of Internet knowledge, and this builds up fear of using e-payment. Results of the present study evident that there is a positive trend towards the perception of using credit cards as a mean for e-payment in e-government services. There are substantial potentials to encourage and further improvements of e-government concept in Sri Lanka.

Keywords— Credit card, e-government, e-payment, perception

I. INTRODUCTION

Technology is advancing swiftly, especially in the field of Information and Communication Technology (ICT). This technological advancement has changed the way people live, life pattern and customs such as work, behaviour, talk and all (Gunawardana, 2007; Christos et al. 2013; Syamsuddin, 2011). In this kind of competitive and complicated context, people look for quick, short and quality services.

In such a context, government as well needs to provide competitive services by integrating new technologies. When a government uses ICT related applications including World Wide Web applications to offer its services to people, the government becomes to an e-government (Yildiz, 2007). In an e-government, a solid and trusted environment is a pre-requisite to ensure the trustworthiness of the payee for paying bills especially utilities such as electricity, water, rates, telephone etc., in fostering payment especially through electronic media.

The expansion of the Internet has facilitated the attractiveness of this payment instrument, for instance electronic commerce (e-commerce) and e-government have created new financial needs that in many cases cannot be effectively fulfilled by traditional payment systems (Sumanjeet, 2009; Ozkan et al. 2010). Teoh et al. (2013) and Muhayiddin et al. (2011) highlighted that electronic payment means are much safer than traditional means. Electronic payment can be defined as the method used to pay for the purchases of goods and services over the Internet (Amirirah, 2013). Pasupathinathan (2013) noted that electronic payment instruments can be categorized into main
three parts namely cash, cheque and card. Credit cards are fallen to card payment mechanism. There are plenty of electronic payment systems such as Payment Service Provider (PSP), Square, Google Wallet, Dwolla, Amazon Payments, 2CheckOut, PayPal, Skrill (before Moneybookers), WePay, V.me by Visa, Intuit GoPayment, Serve from American Express, Samurai by Feefighters, Authorize.Net, Worldpay, Eway, Icelpay, Braintree, Stripe, Credit card, Charge card, Debit card, e-money, e-cheque. Among them, credit card has popularized for paying bills in Sri Lanka, at the same time credit card has become imperative means of payments among the public in an e-government services (Teoh et al. 2013). Central Bank of Sri Lanka (2013) has emphasized that usage of credit card has increased gradually in last decades.

At the end of 2013 total number of card holders in Sri Lanka was 926,949. Total value of transactions was 30,694 Million. At the same time the number of transactions has increased by 10.7 percent and value of credit card transactions recorded a growth 9.4 percent in 2013 in compared with 2012. Accordingly, Central Bank (2013) revealed that the use of credit cards in Sri Lanka has increased due to rapid lifestyle changes and the soaring cost of living, the demand for credit cards and the number of transactions has increased gradually.

This growth will be largely attributing to the improving credit card payment infrastructure in the country, with most of the merchants accepting credit card payments at POS terminals. These cards are positioned in a manner which gives an impression that the cards can be acquired by people from not only the upper class but also the middle income categories. Today credit card industry is highly competitive and almost all the banks are offering credit cards along with Visa International or Master Card.

Sari and Rofaida (2011) state that the respondents for their study have shown a positive attitude towards credit card usage. Perception means the way people think about or understand someone or something and it has several aspects (Schiffman et al. 2006). So that customer perception is a main aspect of demand of credit card. A negative perception leads to reduce the card demand. The positive attitudes can help to influence the intention to use (Davis, 1989). Recent studies have suggested that various factors impact over perception about credit card payment for e-government services. However, such an investigation in Sri Lanka is yet very limited and in its infancy. Thus, this paper aims to examine the perception of credit cardholders on credit cards for e-payment in e-government services through an exploratory inquiry. More specially, following objectives frames the present inquiry.

1. To identify the antecedent conditions to the perception on credit card for e-payment in an e-government environment.
2. To provide some motivating and encouraging factors for policy makers to go further enhancements towards the concept of e-government in Sri Lanka.

This paper is organized into six sections, including the foregoing introduction. Section II explores relevant literature support. Section III presents research methodology. Section IV is devoted to explain result and discussion. Conclusion is offered in section V and finally section VI focuses to limitations and future research directions.

**II. LITERATURE AND HYPOTHESES**

“On February 28, 1950 A Diners club card, the first multiuse credit card was issued. This marked the beginning of the era of plastic money” (Sudhaagar, 2012). As markets mature, credit cards tend to replace cash and checks as the most common payment mechanism. For the first time credit card was introduced to Sri Lanka by commercial banks in 1989. A credit card is a plastic card with a magnetic strip containing data, and is a financial instrument allowing the holder to pay for goods or services on credit and in lieu of cash. Dwarkadas (2011) has defined credit card like “plastic money”. It is a convenient solution for money. Ausubel (1991) emphasized that “Credit cards, including store cards and bankcards, serve two distinct functions for consumers: a means of payment and a source of credit”. Danes and Hira (2009) described that credit cards should be used for convenience reasons. The importance of credit cards, both as a payment and short-term financing medium to today’s consumers is no longer debatable, because of the convenience (Chakravorti et al. 2001).

Wickramasinghe and Gurugamage (2009) attempted to understand the credit card use patterns in Sri Lanka. Wickramasinghe and Gurugamage (2012) attempted to identify and assess the effects of credit card users' demographic
and socio-economic characteristics, knowledge about credit cards, and perceived lifestyle outcomes of the credit card usage on credit card usage practices. In their study, they have not discussed about the perception. According to the Technology Acceptance Model (TAM), presented by Davis et al. (1989), they identified that there is a significant relationship between attitudes and intention to use. Thus based on that theory it was able to identify other scholars who have proven the same association. Lin and Wang (2013) have proven that there is a positive association between attitudes and behavioural intentions. Sari and Rofaida (2011) emphasize that there is a positive attitude towards credit cards usage, with high influence of subjective norm, high behaviour control, high intention to use credit cards and card holders used credit cards wisely. So that cardholders’ positive attitudes are highly related with cardholder perception. Hence there is a positive and significant effect between behavioural attitudes toward the intention to use credit card. Mansfied et al. (2013); Sudhagar (2012) have mentioned that there is a positive relationship with attitude and perception towards the credit card use. Afakli (2007) also has proven the same relationship. Grounded on the aforementioned arguments, the following hypotheses can be proposed.

H3 - there is a positive relationship between cardholder’s attitudes and credit card holder’s perception towards e-payment.

Afakli (2007) in his study states that credit card demand and its usage are depended on consumer perception. According to Clyde (2008), cardholder perception basically determines demand for credit card. At the same time he noted that perception can be altered by providing extra facilities and benefits. So that, most of institutions tend to provide more facilities to their customers. Moreover, popularity of brand name is one of major factors that determine the demand. Interest rates applied for credit cards also affect to change the card holder demand. Huang and Tan (2007) stated that the interest rate and demand for credit card are positively correlated. However Ausubel (1991) suggests that consumers may not even consider the interest rate when making purchases because they do not intend to borrow for an extended period when they make purchases. However interest rate highly affects to change of credit card demand. Amin (2007) suggests that perceived usefulness, perceived ease of use, perceived credibility and the amount of information on mobile credit cards are important determinants to make demand and those encourage customers’ intentions to use mobile credit card for e-payments. On a basis of the above evidences, this study proposes:

H3 - there is a positive relationship between cardholder’s demand and credit cardholder’s perception towards e-payment.

Khalid et al. (2013) emphasize that the adoption and usage of credit cards is found to be significantly influenced by demographic factors and leads to holder’s perception. Gan et al. (2005) has also noted the same. Their research found that the higher income earners, the better educated, older adults, females, married, have more intention to have and use credit card than the other groups. They have considered demographic characteristics. Jusoh et al. (2012) analysis the demographic variables which affect to credit cards perception and attitudes. According to their study the result of t-test has shown that there are no significant differences in credit card practices between male and female working adults. Furthermore one-way ANOVA revealed that there is significant difference in credit card practices with education levels. Arias et al. (2010) described that women, in general, understand credit and know the interest rates of their credit cards with much greater frequency than men and this leads to perception to use credit cards. Drawing a conclusion from the above arguments, this study proposes the following hypothesis.

H3 - there is a positive relationship between cardholder’s demographic characteristics and credit card holder’s perception towards e-payment.

Based on the previous studies, it can be identified that there is a significant relationship between satisfaction and perception of credit cardholders. According to Sudhagar (2012) indicates that the facilities offered by card issuing organizations highly impact to cardholders’ satisfaction and this satisfaction influence the cardholders’ perception for e-payments. Teoh et al. (2013) highlighted the benefits gained by using cards make more satisfaction. Similarly, Dwarkadas (2011) mentioned that services like wider acceptability, discount on purchase and quick processing, popularity and convenience services of bill payments opting have to be increased for further satisfaction. Holder satisfaction affects the card holder’s perception for e-payments. If credit card holders have experience
on credit cards, they tend to use credit cards more often without hesitation and fear, so that this again encourages cardholder’s perception (Sudhagar, 2012). Based on the above evidences, followings hypotheses are proposed:

H4 - there is a positive relationship between cardholder’s satisfaction and cardholder’s perception towards e-payment.

H5 - there is a positive relationship between cardholder’s experience and cardholder’s perception towards e-payment.

III. METHODOLOGY

An extensive review of the literature dealing with the present investigation suggests that demographics factors, credit card experience, satisfaction, attitudes and demand towards the services have a significant influence over the perception on credit card for e-payment. As an outcome of this review, the conceptual framework and five hypotheses was derived. Figure 01 illustrates the hypothesized relationships between the variables. 150 credit cardholders who were selected from ten commercial banks in Sri Lanka provided the data for the specific structure questionnaire used in the survey. The questionnaire basically contains questions relating demographic information as well as five point likert type questions which focused on key research variables.

The total number of commercial banks located in Colombo District is 24 as on February 2013 (Central Bank of Sri Lanka, 2013). There are 554 commercial bank branches belongs to various banks. Out of 554 bank branches, 10 were selected for the study by using convenient sampling method. Then 15 respondents were taken from each selected 10 branches (15*10=150), so that sample size was 150. Following Table 01 shows the sample framework.

Table 01 – Sample framework

<table>
<thead>
<tr>
<th>Bank</th>
<th>Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOC</td>
<td>State 2</td>
</tr>
<tr>
<td>Peoples Bank</td>
<td>State 2</td>
</tr>
<tr>
<td>Commercial Bank</td>
<td>Private 1</td>
</tr>
<tr>
<td>Sampath Bank</td>
<td>Private 1</td>
</tr>
<tr>
<td>HNB</td>
<td>Private 1</td>
</tr>
<tr>
<td>NDB</td>
<td>Private 1</td>
</tr>
<tr>
<td>Nation Trust Bank</td>
<td>Private 1</td>
</tr>
<tr>
<td>HSBC</td>
<td>Private 1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

Table 02 – Demographics Characteristics

<table>
<thead>
<tr>
<th>Demographic Categories</th>
<th>Frequency</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>77</td>
<td>150</td>
</tr>
<tr>
<td>Female</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>25-30</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>30-40</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>40-50</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Above 50</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Govt. employed</td>
<td>51</td>
<td>150</td>
</tr>
<tr>
<td>Private</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>59</td>
<td>150</td>
</tr>
<tr>
<td>Graduate</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Post Graduate</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>PhD</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

To ensure the internal consistency of the survey questionnaire, reliability test was performed with Cronbach’s alpha. As Table 03 shows, each variable
has received alpha value well over the general cut-off value of 0.7 (Hair et al. 2006).

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes toward credit cards</td>
<td>0.710</td>
</tr>
<tr>
<td>Demand for credit cards</td>
<td>0.849</td>
</tr>
<tr>
<td>Satisfaction for credit cards</td>
<td>0.853</td>
</tr>
<tr>
<td>Credit card Experience</td>
<td>0.724</td>
</tr>
<tr>
<td>perception on credit card</td>
<td>0.755</td>
</tr>
</tbody>
</table>

In data analysis, descriptive statistics, independent samples t-test and ANOVA, correlation analysis and multiple regression analysis were employed. All analysis was carried out through Statistical Package for Social Sciences (SPSSv16).

V. RESULT AND DISCUSSION

Correlation analysis which was performed to examine the relationship between credit card experience, satisfaction, attitudes and demand with the perception reveals that each of predictor variables positively relates the perception ($r_1=0.69$, $p_1<0.01$; $r_2=0.80$, $p_2<0.01$; $r_3=0.80$, $p_3<0.01$; $r_4=0.83$, $p_4<0.01$). Thus, first four hypotheses of the study are supported and accepted. To test the demographic factors effect on perception, independent t-test and ANOVA were utilized. Result of t-test suggests that there is no significant difference between male and female on the perception of credit cards on e-payments ($t = 0.61$, $p >0.05$). Result of ANOVA further revealed that there is no significant impact from age, occupation and education to perception of the cardholders ($F = 1.343$, $p >0.05$, $F = 2.549$, $p > 0.05$, $F = 1.878$, $p >0.05$). So that, final hypothesis is not supported. Except the demographic characteristics credit card experience, satisfaction, attitudes and demand are positively correlated with the perception.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Un standardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>$t$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>.900</td>
<td>.996</td>
<td>1.676</td>
<td>.096</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>.249</td>
<td>.221</td>
<td>2.906</td>
<td>.004</td>
</tr>
<tr>
<td>Demand</td>
<td>.354</td>
<td>.403</td>
<td>5.719</td>
<td>.000</td>
</tr>
</tbody>
</table>

Dependent Variable: Perception

Multiple regression analysis was carried out to determine the overall impact of the predictor variables on perception. Results were summarized in Table 04. According to results, predictors of satisfaction, attitude and demand are positively affected for the dependent variable. Thus the above tested hypotheses are proven with the results of multiple regressions. The predictor, experience is significant at the 10% significant level, so that the hypothesis was accepted and supported to perception. Hence this study revealed that above four antecedents is important and make influence on the perception to use credit cards. The Adjusted R Square value was 0.774 and the used model was significant ($F=64.869$, $p=0.000$). This suggests that the behavioural elements of credit card holder’s perception on credit card for e-payment are explained 77.4% of the variance of credit card perception.

V. CONCLUSION

Sri Lanka is moving toward greater e-government adoption interestingly. Accordingly means of e-payment have become an issue. Through this study it could be found that there is a positive perception on credit card use for e-payments in e-government services. Thus e-payment methods should be taken into consideration, at the same time the majority of online population in Sri Lanka is yet considered “infants” with a shallow level of Internet knowledge, and this builds up fears of using e-payment. However, results of the present study evident that there is a positive trend towards the perception of using credit cards as a mean for e-payment in e-government services. Hence it is worth to take hand some promotional campaigns to improve the influencing factors further. Thus, there are substantial potentials to encourage and further improvements of the e-government concept in Sri Lanka.

VI. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The most of the credit card users live in the Colombo district, as it is the commercial capital. Due to this reason, study was limited to one district of the country. It was examined few aspects of the perception on credit cardholders towards e-payment in e-government services in Sri Lanka. So that, it is worthwhile to note that to provide a better generalization, it should consider more aspects of perception and should expand the study area as much as possible.
REFERENCE


services”, Proceedings of International Conference on Information and Social Science and International Symposium on Marketing, Logistics, and Business.


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Determinants of the Factors Affecting the Customer Satisfaction in Super Market Industry in Sri Lanka

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Abstract—customer satisfaction and service quality are crucial factors when defining organizational success. The winning approach in bringing success is to serve the best quality to the customers. The current situation requires improvements of customer satisfaction of the supermarket industry of Sri Lanka have come under limelight due to the competition where super markets are trying to gain competitive advantage through the human factor. Excellent customer satisfaction does not only mean higher profits but also acts as a challenge for the employees to perform to their maximum abilities to meet the competition. By serving customers with the best quality products, organizations can maintain and expand their customer base and this will cause an increase in customers’ confidence and competitive advantages among the market leaders. This study examines the effects of various factors of the supermarket industry which affects customer satisfaction. The purpose of the study is to determine the factors affecting customer satisfaction in the super market Industry in Sri Lanka. Learning of this study would help to identify the areas which are need to be improved in order to improve overall customer satisfaction and service quality in order to gain customer satisfaction.

In this research paper, the relevant data were gathered through a self-administered questionnaire from 300 respondents. Univariate descriptive analysis has been carried out. Chi-square test and Fisher’s Exact test has been carried out in doing hypothesis testing. Multinomial logistic regression approach has been used in data related to customer satisfaction.

It of great importance to understand how to satisfy customers as it seems to be the key success factor in modern organizations. Service quality, knowledge of the staff, support given by the staff, recommendations and the attire of the staff variables were significant in the model. The recommendations are given to improve the service quality in order to increase the customer satisfaction which helps the super markets to attract more customers in future.

Keywords—Customer satisfaction, Multinomial logistic regression approach, univariate analysis, Super Market Industry

I. INTRODUCTION

Sweeping the traditional retailing and grocery concept, super markets are emerging with the concept of “Mega Stores” by providing all the goods shopper demands in one store at attractive discounted prices (Stanton 2007). “The emergence of supermarkets, urbanization, income increase, high quality bulk procurement, and increased female participation in labor force have created a new demand pattern, shifting the focus towards continuous supply of high quality, value added products with improved processing, packaging and labeling” (Samarthuga A 2006 15).

Cargills Food City, Keells Super and Arpico are the three leading super market chains of the country and they have started expanding aggressively. Other than these three there are Sunup (Laugfs) super, Sentra, Sathosa and small super markets which are owned by entrepreneurs.

Currently supermarkets contribute to twelve percent of the Sri Lankan economy by providing a unique contribution to the national development. 516 supermarkets are being operated in the country which can be categorized as supermarkets, hypermarkets and convenience stores. Cargills Food City operates 213 supermarkets, Arpico Super Centre functions 10 hyper markets, and Keells super has 48 super markets and the Sathosa
controls a convenience store network of 250 stores. (Sri Lanka's Supermarket Trade to Grow at an unprecedented level | News360.lk)

Supermarket segment plays a key role in the lives of the people in many ways. Maintaining sustainable supply chain to achieve service quality and customer satisfaction has become overall goal of the super market industry.

II. LITERATURE REVIEW

Howardell’s stated that ‘customers want it all and they want it now’ (Howardell, 2003). This statement clearly describes the competitive nature of supermarkets. Due to the increasing nature of supermarket industry there are plenty of supermarkets within a selected geographical area. Supermarkets are located within walking distance which reminds the urgency of maintaining service quality and customer satisfaction. If supermarkets fail to satisfy customers and to deliver quality service then it will automatically shift customers to their competitors (Codrington, 2002). It reveals that supermarkets are highly depending on the two factors which are called service quality and customer satisfaction. It is apparently difficult to survive in the supermarket industry without satisfying those two key factors.

Several studies highlight five important dimensions of service quality in retail sector which have a direct impact on profit. They are Physical aspect, reliability, personal interaction, problem solving and ps. Physical appearance of the store, facility and well managed layout helps to gain competitive edge and to influence customer satisfaction (Dabholkar et al, 1996). According to (Abu 2004) and (Fisher et al, 2006) well figured supermarket layout is easily navigating customers with less search time resulting customer satisfaction which leads to the customer retention. Reliability simply implies keeping promises where supermarket’s main intention is to make available products when required (Dabholkar et al 1996). Michel (2001) stated that supermarkets should response customer’s problems on time and must handle return items in a correct manner while having continuous system to identify customer related problems on stores. Store policy which includes loyalty programs, credit facilities, operating hours, parking facilities and other additional services have a direct impact on service quality of the supermarket. According to all these facts it reveals that supermarket with high level of service quality maintain customer satisfaction while poor level of service quality resulting dissatisfied customers.

Therefore supermarkets must highly value loyal customers those who are intentionally choose their stores over their competitors irrespective of the promotions or offerings at the competitor’s premises (Levy and Weitz 2001). Understanding of consumer behavior is really complex and comprehensive processes that involve an evaluation of service quality and consumer satisfaction (Cronin et al. 2000). Even though customer satisfaction and service quality have an influence on store loyalty (Bennett and Rundle-Thiele 2004), those two factors are not sufficient to ensure the loyalty (Alonso 2000).

So it is the responsibility of supermarkets to identify what customer wants and deliver it to them with more value which they did not expect, to have loyalty customers forever. Zairi (2000) point out many studies shows repeat purchases and loyalty are two main benefits offered by satisfied customers to the supermarket industry and also they attained to recommend supermarket to others when they are satisfied with the services. Furthermore this statement is sustained by La Barbera & Mazarsky (1983) who also viewed customer satisfaction have an considerable impact on customer repurchase intentions whereas dissatisfaction led customers to discontinuation of purchase. Additionally dissatisfied customers are resulting discontinue purchasing of goods and services and engage in a negative word of mouth (Hoyer & MacInnis, 2001).

Customer’s impression on the supermarket will depend on the level of quality service that they provided. Reputation of the supermarket will depend on numerous factors. According to Berman and Evans (2005) overall image of the supermarket is influenced by store location, merchandise and physical attributes, pricing, firm’s placing, shopping experience, customer service, target market, promotion tools (such as advertising, public relations, personal selling, sales promotion) and community service. Further he point out that a retailer’s image depends heavily on its ‘atmosphere’ or the psycho-logical feeling a customer gets when in that retail outlet.
III. METHODOLOGY

In this research paper, the relevant data were gathered through a self-administered questionnaire from 300 respondents.

Descriptive analysis has been carried out to check the relationship between response variable and other explanatory variables.

Hypothesis testing has been carried out using fisher’s exact test as it is more practical for small sample sizes. Due to the difficulty faced in maintaining minimum expected cell count in performing Chi square test, Fisher’s exact test has been carried out for some of the variables. Multinomial logistic regression model has been used to build a statistical model. In doing regression modelling variables has been selected with respect to the significance that they have shown in hypothesis testing. Forward selection method has been used in modelling. Goodness of fit test and Pseudo R-square test has been carried out for model diagnoses to detect the adequacy of the model.

Likelihood ratio test has been used in checking the significance of the explanatory variables in the model and Odds ratio has been used in interpreting the model. In statistics, a likelihood ratio test is a statistical test that is designed to distinguish any of a broad range of departures from a specific null hypothesis.

IV. ANALYSIS AND INTERPRETATION

As per the result obtained, out of 300 respondents 46.7 percent are Cargills Food city customers where 24 percent use Keells super while 21.3 percent shopped Arpico super centers. Only 7 percent of respondents visit Laugf sun up. Remaining 1 percent of people responded as other super market consumers.

Figure 1: Preferences percentage for Super markets in Colombo district

Below hypotheses has been checked using Fisher’s exact test;

Ho: overall customer satisfaction of supermarket is independent from the ith variable
H1: overall customer satisfaction is depending on the ith variable

<table>
<thead>
<tr>
<th>i</th>
<th>Variable name</th>
<th>Test statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Staff appears to know about the products</td>
<td>83.536</td>
<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>Individual attention</td>
<td>69.854</td>
<td>.000</td>
</tr>
<tr>
<td>3</td>
<td>Availability of products</td>
<td>62.456</td>
<td>.000</td>
</tr>
<tr>
<td>4</td>
<td>Reputation</td>
<td>58.367</td>
<td>.000</td>
</tr>
<tr>
<td>5</td>
<td>Recommend the supermarket</td>
<td>53.286</td>
<td>.000</td>
</tr>
<tr>
<td>6</td>
<td>Competitive prices</td>
<td>48.572</td>
<td>.000</td>
</tr>
<tr>
<td>7</td>
<td>Overall service quality</td>
<td>45.568</td>
<td>.000</td>
</tr>
<tr>
<td>8</td>
<td>Fresh vegetables and fruits</td>
<td>37.403</td>
<td>.000</td>
</tr>
<tr>
<td>9</td>
<td>Appropriate info on sales promotions</td>
<td>37.314</td>
<td>.000</td>
</tr>
<tr>
<td>10</td>
<td>Staff always helpful</td>
<td>30.101</td>
<td>.000</td>
</tr>
<tr>
<td>11</td>
<td>Products are appropriately displayed</td>
<td>29.867</td>
<td>.000</td>
</tr>
<tr>
<td>12</td>
<td>Punctual info on sales promotions</td>
<td>29.714</td>
<td>.000</td>
</tr>
<tr>
<td>13</td>
<td>Sell quality products</td>
<td>26.802</td>
<td>.000</td>
</tr>
</tbody>
</table>
According to the analysis between Overall customer satisfaction and explanatory variables, all most all variables except special attention given to children, frequency of visits, equally treating customers, and offering membership cards are highly significant. It can be concluded that, all explanatory variables except above stated are highly correlated with overall customer satisfaction and above overall customer satisfaction is independent from the above mentioned variables.

Based on the results of hypothesis testing advanced statistical model has been fitted using multinormal logistic regression approach.

### Table 2. model fitting information

<table>
<thead>
<tr>
<th>Model Fitting Criteria</th>
<th>Likelihood Ratio Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-2 Log Likelihood</td>
</tr>
<tr>
<td>Intercept Only</td>
<td>318.313</td>
</tr>
<tr>
<td></td>
<td>171.291</td>
</tr>
</tbody>
</table>

### Table 3. Pseudo R square for the fitted model

<table>
<thead>
<tr>
<th>Effect</th>
<th>Cox and Snell</th>
<th>Nagelkerke</th>
<th>McFadden</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.435</td>
<td>.526</td>
<td>.326</td>
</tr>
</tbody>
</table>

### Table 4. likelihood ratio test

<table>
<thead>
<tr>
<th>Effect</th>
<th>Model Fitting Criteria</th>
<th>Likelihood Ratio Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-2 Log Likelihood of Reduced Model</td>
<td>Chi-Square</td>
</tr>
<tr>
<td>Intercept</td>
<td>1.470E2</td>
<td>.000</td>
</tr>
<tr>
<td>Staff knowledge</td>
<td>199.419</td>
<td>52.397</td>
</tr>
<tr>
<td>recommend</td>
<td>196.108</td>
<td>49.086</td>
</tr>
<tr>
<td>help</td>
<td>158.077</td>
<td>11.055</td>
</tr>
<tr>
<td>attire</td>
<td>168.864</td>
<td>21.842</td>
</tr>
<tr>
<td>Service quality</td>
<td>159.476</td>
<td>12.454</td>
</tr>
</tbody>
</table>
When compared to customers those who are satisfied about the support given by the staff are less likely to be satisfied about supermarkets. When compared to customers those who are neutral about the support given by the staff are neither recommended nor not recommended are less likely to be satisfied about supermarkets. When compared to the customers those who are satisfied about the knowledge of the staff; - Satisfaction levels of customers those who said staff knowledge is at satisfactory level is more likely to be satisfied about supermarkets. - Satisfaction level of customers those who said staff knowledge is at dissatisfactory level is less likely to be satisfied about supermarkets. When compared to the customers those who are recommending supermarkets; - Satisfaction level of customers those who neither recommended nor not recommended are less likely to be satisfied about supermarkets. - Satisfaction levels of customers those who not recommended supermarkets are less likely to be satisfied about supermarkets.
- Satisfaction level of customers those who said dissatisfied about the support given by the staff are less likely to be satisfied about the supermarkets.

When compared to the customers those who are satisfied about the attire of the staff;

- Satisfaction level of customers those who are neutral about the attire of the staff are less likely to be satisfied about the supermarkets.

- Satisfaction level of customers those who said dissatisfied about the attire of the staff are less likely to be satisfied about the supermarkets.

When compared to the customers those who are satisfied about the service quality;

- Satisfaction level of customers those who are neutral about the service quality are less likely to be satisfied about the supermarkets.

- Satisfaction level of customers those who are dissatisfied about the service are less likely to be satisfied about the supermarkets.

V. GENERAL DISCUSSION AND CONCLUSIONS

According to the Pearson chi square test for association and Fisher’s exact test for association, some of the explanatory factors were identified as significant and proved there is a relationship between customer satisfaction and those explanatory variables. Convenient location, individual attention on customers, staff knowledge about the products, availability of desired products, reputation of the super market, competitive prices of goods, service quality, fresh vegetables and fruits offered by super market, providing appropriate information on sales promotion, helpful staff, appropriately displaying products on shelves, give punctual information on sales promotion, sell quality products, offer high quality of own brands, vehicle parking facilities, cleanliness, available broad assortment of products, convenient operating hours, handling customer complaint in efficient manner, frequent promotions, attire of the staff (well dressed), age, income and occupation of the respondents and layout of the supermarkets are identified as significant factors.

Multinomial logistic regression model has identified five factors which are highly significant namely “staff knowledge about the products and guide people, attire of the staff, helpful staff, service quality and recommendation or the positive word of mouth about the super market”.

Recommendation is the positive word of mouth. According to the results recommendation has a significant impact on the overall customer satisfaction. If one customer recommend his/her preferred super market to his/her friend it indicates the loyalty and their satisfaction towards the super market. Bad word of mouth leads to the loss of the business. There for super markets must ensure to keep promises to their customers for sustainable future.

Staff knowledge about the products, their attire (well-dressed staff) and helpfulness of staff are also most significant factors that affect to the customer satisfaction. These factors indicate the standard of the supermarket which people are highly concern. Staff needs to be educated about the products as well as the good manners to attract customers in professional way. Now a day’s customers are more interested in looking user friendly environment for shopping purposes. It helps customers to save their valuable time. But staff should not be annoying to customers. Most of the respondents stated in questionnaires staff appears annoying to customers due to their over helpfulness and also some staff members force customers to buy products according to staff guidance. Therefor super markets need to be considering these factors when training their employees.

The research findings depict that, service quality, availability of products, price tags are clearly indicates, provide appropriate and punctual information on sales promotions, availability of parking facilities, good reputation, cleanliness, convenient location and operation hours, Staff knowledge about the products, their attire (well-dressed staff) and helpfulness of staff and recommendation are the most significant.

However layout of the super market, after sales support, delivery services, special attention for children (game zones), and freshness of meats, and fish, membership cards, waiting time, gender, marital status, income and operating hours may either have no direct impact upon the customer satisfaction which need to be found out by future research work.
Finally the research study supported to outline the pros and cons of super markets for consumers, for industry and for the country in a detailed manner. Customers are the most benefitted segment from the super markets. Due to convenient operating hours customers are able to save their valuable time. They do not want to keep separate time for shopping with this concept. It allows them to shop even after their works. And also prices offered by super markets are affordable for middleclass people too. Earlier there had been a period which super markets were limited to high class people. But with the changes of the industry that concept also has been changed by providing opportunity to each and every one.

REFERENCES


BIOGRAPHY OF AUTHORS
S.P. Pubudu Pathirana is a graduand of BSc in International Transportation Management and Logistics offered by Dalian Maritime University and facilitated by faculty of Management CINEC Maritime Campus.
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Online Shopping Behaviour of Young Adults in Higher Education Sector: How Brand Matters

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Abstract—The purpose of this study is to find out the online shopping behaviour of Sri Lankan young adults with special emphasis on brand loyalty. Building and maintaining brand loyalty is a vital part of establishing sustainable competitive advantage. Consumers become committed to a particular brand and make repeat purchases over time if they are loyal to that brand. In online shopping environment, consumers have no physical touch to the products and services but prices among different brands can be easily compared with each other. For this study, a structured questionnaire was used to gather data from 100 young adults from the University of Moratuwa, Sri Lanka. Four products that young adults frequently purchase were selected. This paper assesses the relationship between brand loyalty and brand satisfaction. A clear relationship could be established between proposed factors of brand loyalty and brand satisfaction. Further, this study attempts to establish a relationship between the average price paid and brand loyalty. However, a clear relationship could not be established between them. In addition, the relative importance of “brand” when purchasing the selected products online is assessed.

Keywords—online shopping, brand loyalty, brand satisfaction, young adults

I. INTRODUCTION

Online shopping can be identified as one of the most rapidly growing forms of trade in Sri Lanka. Traditionally, consumers go to stores to inspect the goods before they buy them. In online shopping, customers need not go to stores, but they can make choices on the basis of what they see on the computer screen. Even though there are some limitations in online shopping such as security problems, shipping costs, defective items etc., it saves time; price comparisons can be done; and also shoppers can purchase the goods at any time of the day. Growing numbers of consumers shop online to purchase goods and services, gather product information or even browse for enjoyment. Online shopping environments are therefore playing an increasing role in the overall relationship between marketers and their consumers (Demangeot & Broderick, 2007).

A. Online Shopping

Online shopping holds a great potential for youth marketers. According to Vrechopoulos et al. (cited in Alam et al. 2008) the young are the main buyers who buy products online. Another study by Sorce et al. (2005) have found that young consumers search for more products online and they are more likely to agree that online shopping is more convenient. Alam, et. al (2008) have said that since the young consumers are playing an increasing role in online shopping and if the online retailers know the factors affecting online shopping, they can develop their marketing strategies to convert potential buyers to actual ones. Therefore, it is worth studying the role played by the brand loyalty when young adults shop online.

B. Brand Loyalty in Online Shopping

A consumer is considered as a brand loyal whenever a consumer perceives that a brand is offering him the right product features and the desired level of quality and hence repeatedly makes a conscious or subconscious repurchase of that particular brand (Agraval & Siddharth, 2010). Since the consumers cannot touch and feel the product online, they should be very careful when purchasing goods online. One solution is to gain the consumer’s confidence through brand loyalty. In contrast, consumers could easily compare the prices across the shops/brands in online shopping.
Thus it may reduce the effect of brand loyalty in purchasing decisions in online purchasing environments. Therefore, it is useful to study the effect of brand loyalty in online shopping.

With the rapid growth of E-Commerce and online consumer shopping trends, the importance of building and maintaining customer loyalty in electronic marketplaces has come into sharper focus in marketing theory and practice (Gommans et al. 2001). Research has shown that loyal customers are less price sensitive (Reichheld, cited by Moisescu et al. 2010) and the expense of pursuing new customers is reduced (Dowling cited by Moisescu et al. 2010), while organizational profitability is positively affected by the level of brand loyalty (Aaker, cited by Moisescu et al. 2010). Brand loyalty can enhance marginal cash flow and profitability, as loyal customers often accept to pay a price premium for their favorite brands, are easily stimulated to new usage situations and tend to increase intensively and extensively their spending on the brand (Davis, cited by Moisescu et al. 2010).

The marketing communication expenditure is also reduced as loyal customers are already confident in the purchase decision and therefore process information rapidly, instruments like sales promotions or advertising being less intensively needed in this case in comparison to brands with low loyalty degree. Moisescu et al. (2010) said that loyalty enhances the process of attracting new customers. The importance of satisfying a customer in order to create behavioural loyalty is highlighted by Schultz, cited by Moisescu et al. (2010). Bloemer et al. (1994) conclude that consumer satisfaction positively affects brand loyalty. According to the findings of Dhurup et al. (2014), packaging, price and brand awareness have shown a significant predictive influence on brand loyalty.

Internet has widely spread among the Sri Lankan population, specially among young adults with relaxed financial policies and high quality delivery services. It is interesting to know how young adults behave in the online shopping environment with a limited budget with the “brands” that they are fond of. There are many researches done on online shopping and interesting factors have been found out on online shoppers’ behavioural patterns, demographic factors etc. (Yatigammana, 2010). Even though there are some researches conducted on online shoppers’ buying behavior, it is hard to find the role played by brand loyalty in an online shopping environment. Specially literature in Sri Lanka is rare in this regard.

The main objective of this study is to assess the relationship between brand satisfaction and brand loyalty with regard to online shopping behaviour of young adults in higher education sector. This will be tested using four selected products. The second objective is to validate the model proposed in Figure 1. Further, the study attempts to establish a relationship with price and brand loyalty. It is commonly argued that brand loyalty is not in existence in low valued products where the level of involvement in purchasing is less. The third objective is to assess the relative importance of “brand” when purchasing the selected products online.

In this study the following model is proposed as the indicators of brand loyalty.

Figure 1. Indicators of Brand Loyalty

II. RESEARCH METHODOLOGY

A. Sample Selection

E-enabled young adults shop online increasingly. The target group of this study consisted of youth aged 23-26 years studying in or just passed out from the university of Moratuwa, Sri Lanka who are have a limited budget.

The sample consisted of 100 final year undergraduates and just passed out graduates of the University. Convenient sampling was used for the study and equal number of respondents were selected from the Faculty of Engineering and Faculty of Information Technology. Since the University of Moratuwa is a technical university, majority of the respondents were male which accounts for 73% and the female proportion was 27% out of the total respondents.
B. Data Collection
Pilot study was conducted to get an overall idea about online shopping, brand loyalty and the most sought after product categories in online shopping. Interviews were conducted with the outlet managers of supermarkets to get an overall idea about online shopping behavior of consumers.

A Structured questionnaire was used for data collection. One hundred and fifty (150) questionnaires were distributed and 100 completed questionnaires were used for data analysis purposes. The first part of the questionnaire consisted of questions to check internet shopping behaviour. The second part includes questions to identify indicators of brand loyalty (as in the given model in figure 1) in an online shopping environment. For this purpose, Likert scale was used where No. 1 is ‘strongly agree’ and No. 5 is ‘strongly disagree’. Based on the results of the pilot study the selected products were mobile phones, USB flash drives, accessories and shoes.

Figure 2 shows the distribution of the sample according to their internet usage per day. It indicates 52% of the participants spent more than one hour daily on the internet. Majority of them (88%) have internet access in their homes whilst 64% access the internet through their mobile phones. Out of the sample, 45% of participants have internet connection in the university/office. However, 72% of participants access the internet frequently at home. Surprisingly, 36% of them access internet through university/office connection. Forty four percent (44%) of them use mobile phones and other methods to access the internet frequently.

IV. DATA ANALYSIS
A. Internet Shopping Behavior
Respondents were requested to rank the purpose of surfing the internet. Results are depicted in Figure 3 where higher ranked options are given a high weighted rank.

Most of the respondents use the internet to search information as shown in the above figure. Internet usage for shopping purposes seems to be drastically low.

Figure 4 shows the purchase preference online over a spectrum of goods. Electronic items amount to the highest purchase preference in online shopping as it is depicted therein.

B. Brand Loyalty
Respondents were asked whether a brand name comes to their mind when they think about online shopping. More than 60% surprisingly responded in
a negative manner, indicating ‘no’ as the answer. But contrastingly, it could be seen that when the respondents buy online, 32% buy a well-known brand. But the majority (52%) compare prices between the brands when they purchase online. In general, people buy known brands online. Purchasing goods online for a trial is surprisingly less and it could be attributed for a lack of personal touch in online shopping. Online purchasing enables consumers to compare prices online more easily than in the physical purchasing mode. This is verified by the results.

Further, the respondents were asked to rank the specific information that they look at when they purchase online. Figure 5 shows the weighted rank for different information.

![Figure 5. Factors considered when purchasing online](image)

While price is the most looked at information, the factor reviewers’ comments the least important. However, when asked about the importance of reviewers’ comments, more that 70% replied of it as ‘important’ when purchasing high valued products. Most commonly, mobile phones, cameras, electronic items etc. would require a greater backing up with the reviewers’ comments to support the purchasing decision, even if it is from the favourite brand of the consumer.

C. Brand Satisfaction and Brand Loyalty

Brand satisfaction for the selected products was measured using a Likert scale. A positive weight was given if the respondents agreed with the statement and a negative weight was given if the respondent did not agree with the statement.

Brand Loyalty was measured as for the model proposed in Figure 1. Each element of the brand loyalty was measured for all the selected products.

The relationship between brand satisfaction and brand loyalty is shown in Figure 6. X and Y axis values depict the average of the weighted responses as described above. Variation shows a positive linear relationship with $R^2 = 0.87$. This relationship proves that there is a positive correlation between the proposed brand loyalty indicators with brand satisfaction. This result validates the proposed model as shown in Figure 1.

![Figure 6. Brand satisfaction vs. brand loyalty](image)

Brand loyalty is plotted against the average price as shown in figure 7.

![Figure 7. Price vs. brand loyalty](image)

Mobile phone, which has the highest average product price has the highest impact of brand loyalty in online purchasing environment. As for the results, it does not show a positive relationship between the average price and the effect of brand loyalty in purchasing decisions. Low priced product (USB) has the second highest brand loyalty. Therefore, presumption as explained in the objectives is not valid.
D. Factors considered in Online Purchasing

Respondents were asked to rank the properties that they looked at when purchasing the selected products in an online shopping environment. Figures 8-11 show the radial graphs for the selected products.

For mobile phones, price, design/features and brand seem to be the vital factors. Even though others’ opinions have the least preference in all the products, the weighted rank is comparatively higher in mobile phones. Respondents may consider others’ opinions when they buy high involvement products.

Figure 8. Factors considered when purchasing mobile phones online

Figure 9. Factors considered when purchasing USB drives online

Figure 10. Factors considered when purchasing accessories online

Figure 11. Factors considered when purchasing shoes online

V. CONCLUSION

Online shopping behaviour of young adults in higher education sector was analysed with special emphasis on brand loyalty. The relationship between brand satisfaction and brand loyalty was established even in the online shopping environment.

Further, it could be concluded that the proposed model in Figure 1 is validated through the results. A clear relationship between the average price paid and the brand loyalty was not established and it could be concluded that the price may be one of the variables young shoppers looked at whilst many other variables, such as brand, design/features etc. may exist. In general, the effect of ‘brand’ plays a major role in online purchasing decisions.
The findings of this study provide interesting insights for marketing managers who are interested in promoting online shopping. As the Internet usage grows worldwide, managers need to understand their consumers and the distinguishing characteristics between Internet shoppers and non-shoppers globally. This distinction will enable managers to tailor the online experience in ways that will actually make Internet shoppers purchase and repurchase from their websites while enabling these websites to appeal to non-shoppers as well. An additional goal of such an understanding should be to encourage non-shoppers to shop online.

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BIOGRAPHY OF AUTHORS

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Investigation on Functions and Product Structure of Islamic Banking vs. Conventional Banking in Sri Lanka: a Case Study

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Abstract - Islamic banks (IBs) were originated to satisfy the financial needs of Muslim community by rejecting interest and following Profit-Loss sharing paradigm while conforming to Shariah principles. IB is increasingly gaining attention across the global financial environment due to its unique framework relative to Conventional banks (CBs). But the public still lack the comprehensive knowledge about how actually IBs differ from CBs. Hence, there is a lack of participation of the public with the IBs for banking transactions. The objective of the study is to explore ‘how’ and ‘why’ IBs differ from CBs with giving special reference to the functions and products. Hence, this research would fill the knowledge and empirical gap in the Sri Lankan context.

The study adopts interpretative methodology and multiple case study strategy. Primary and secondary data were collected through interviews, observations, reports and websites.

Major findings of the study concluded that IBs and CBs enclose differences as well as similarities in their framework. The major differences were identified connecting to the framework of IBs as they need to follow interest free paradigm, Profit and Loss Sharing (PLS) paradigm and Shariah principles in performing the banking functions comparing to interest based CBs. However, still both IBs and CBs function as financial intermediary carrying out similar functions. Similarly in terms of product and services, IBs offer similar saving and financing solutions to banking customers as of CBs, but still their products tend to be unique as they adhere to above principles and variety of Shariah product concepts such as Mudharaba in forming savings accounts and Mudarabah, Musyarakah, etc in offering financing products. Likewise similarities and differences can be observed in investments and financing structure between two systems.

Thus it is evident that IBs and CBs enclose differences as well as similarities in their product and working structure. Accordingly the major principles of interest free paradigm, Profit and Loss Sharing paradigm and Shariah principles have influenced for the emergence of unique structure that differentiate an IB from general CBs though few similarities can be observed between two systems. Thus these results are consistent with the findings of other researchers in the similar areas.

Keywords: Islamic bank, Conventional bank, Functions, product structure

I. INTRODUCTION

Islamic Banking was originated to satisfy the financial needs of Muslim community. This has gained much attention with its unprecedented growth and expansion in last decades. With its growing awareness and success, Islamic bank made its entry to the Sri Lankan banking industry in 2009. Islamic banks (IBs) deem to be very unique than conventional banks (CBs) since they reject interest and follow interest free framework while conforming to Shariah principles. This case study was carried out with an objective to comprehensively understand the Islamic banking system and its concepts. The study attempts to ascertain to what extent Islamic banks differ from conventional banks and its application of Shariah principles in Sri Lankan context with especial reference to functions and products of the two banking systems.

II. METHODOLOGY

This study has selected two banks, selected Islamic Bank (IB1) and selected Conventional Bank (CB1) accordingly, each representing IBs and CBs. Interpretative methodology and multiple case study strategy have been employed to analyze the data. Primary and secondary data were collected through interviews, observations, reports and websites. This study was conducted in a structured way to ensure the validity and the reliability of the findings.
A. Research Purpose and Research Approach

The purpose of the current research is to gain a better understanding of the concept IB and its application in the Sri Lankan context as well as to identify how and to what extent it differs from CBs. As IB is a new concept to the financial market of Sri Lanka, it requires comprehensive understanding about the subject. Therefore, the qualitative approach has been used in this study to go profound into the research area and to achieve the objectives of the present study. Hence the study will be an exploratory research.

B. Research Philosophy and the Strategy

The research philosophy the study adopts is interpretative methodology and multiple case study strategy. Accordingly, two case studies are conducted to address the research questions as it allows an easy foundation to compare and validate the results as well as to conduct a cross-case analysis (Yin, 1994; Merriam, 1998).

Two banks were selected from the banking sector as the study focuses on the banking system of the county.

C. Data Collection

Data are primarily collected by following in-depth face to face focused interviews employing an interview guide. Further, within the scope of research, the current study has further used internet and observation as sources of data collection. The documentation was also used in order to supplement evidences from other sources. For example, data available in bank information materials as annual reports, articles and brochures were collected to acquire an overall view of the present situation of banks.

III. RESULTS AND DISCUSSION

A. Functions

CB1 as well as IB1 perform multiple functions such as deposit mobilization, agency services and general utility services to meet the needs of banking customers. The primary function of CB1 is to accept deposits and advance loans on the basis of different interest rates. Hence, CB1 highly depends on interest rates. As to the informant, CB1 continually adopts low cost deposit mobilization strategies in order to continue their growth. Additionally they perform variety of other functions based on agency services and general utility services by facilitating various fee based products and services to them.

Similarly, IB1 also performs variety of functions to provide diversity of unique financial solutions to its customers. Their main function is also to ensure deposit mobilization by pooling funds from savers and lending them to investors to invest in productive ventures to generate profits. Additionally IB1 is identified to perform functions to provide agency services and general utility services to its customers.

However, though IB1 perform identical functions as CB1 (Table 1), their functions are unique than CB1 as IB1 function in accordance with Shariah principles and interest free framework, whilst CB1 operate within the framework of interest and they do not follow religious laws as Shariah.

This argument was brought in to light by the informant of IB1:

“As a Shariah compliant bank, we also offer the same functions as CBs but by following the principles of Shariah. Therefore our functions are unique and designed based on the stipulated Shariah guidelines and principles than other CBs”.

Therefore, IB1 functions are designed under interest free framework to mutually share risk as well as rewards with customers, with an aim to avoid speculation and to ensure ethical investments. However, both the banks place a major emphasis on deposit mobilization than the other functions as they earn higher income by advancing loans. Hence, these findings of the study are consistent with the findings of Ahamad et al. (2010), Al-Jarhi and Iqbal (2001), Ahmad et al. (2010) and Bahari (2009) as they also have identified that the main functions of IBs and CBs involve deposit mobilization, agency function and utility functions.

<table>
<thead>
<tr>
<th>Main Functions</th>
<th>IB1</th>
<th>CB1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit mobilization</td>
<td>Accept deposits, Advancing Loans</td>
<td>Accept deposits, Advancing Loans</td>
</tr>
<tr>
<td>Agency functions</td>
<td>Collection of cheques, Execution of standing orders</td>
<td>Collection of cheques, Execution of standing orders</td>
</tr>
<tr>
<td>Offer general utility services</td>
<td>Collection of utility bills</td>
<td>Collection of utility bills</td>
</tr>
</tbody>
</table>
Foreign exchange and treasury services
ATM and credit card services

Foreign exchange and treasury services
ATM and credit card services

Source: Researcher's own construction (based on the functions of two banks)

Therefore, the findings confirm that IBs perform identical functions as CBs, but still their functions are unique than of CBs, as IBs are required to follow Shariah principles and Islamic law as a Shariah compliant bank. Very interestingly these findings are supported by Paino et al. (2011), Mouawad (2009), Hanif (2011) and Benamraou (2008) as they have also discovered that the functions of IBs are similar to that of CBs, but differences can be foreseen in the operation of two systems as IBs are Shariah followers and function within interest free, when CBs are interest based and not operate under religious laws as Shariah

IB1 exists to achieve the objectives such as socio-economic justice, fairness and equality, whereas main consideration of CB1 is to maximize returns. As a result, IB1 functions are designed by adhering to Islam values and Shariah principles in order to meet these goals unlike CBs. These results are consistent with Paino et al. (2011), Ahmed (1987), Uzair (1976) and Hanif (2011). But the the study contradicts with the findings of Mouawad (2009) as he has emphasized that IBs and CBs have exact same operations, as the practices of IB is also driven towards profit maximization than social benefits as CBs.

Furthermore, IB1 is required to develop a customized information system that supports interest free products, Profit and Loss Sharing (PLS) paradigm and Shariah principles in performing these functions. Hence, they do not adopt the current banking software systems as CB1, as those softwares' are developed based on interest products.

B. Product Structure

CB1 offers current accounts, savings accounts and investment accounts to the banking customers based on interest. On the other, IB1 offer savings accounts and investment accounts based on PLS ratios, while current accounts are offered with a guarantee for principal deposit amount and it is not covered by PLS paradigm. However unlike CB1, IB1 follows Shariah product concepts Mudharaba in forming savings accounts and investment accounts. The PLS ratio for the deposit accounts in IB1 is pre-decided. But the actual profits and loss shared with customers depend on the monthly earnings of IB1. Therefore, the profit rates to customers of IB1 are subject to change according to the monthly profits of the bank and thus monthly rewards to customers depend on that calculated monthly rate. Further when compared to CB1, IB1 offers more profit rates to saving accounts depositors and less profit rates to investment account holders than CB1.

When looking at savings, It is identified that resident customers of IB1 get more percentage of profits, while IB1 gets more profit ratio than customers pertaining to foreign accounts. However, the resident customers get higher interest than foreign account holders in CB1. Generally the customers of IB1 as well as CB1 get higher returns when the period of investment increases than the bank pertaining to investment accounts. Additionally, the term deposits tend to dominate in CB1 while savings deposits dominate in IB1. Hence, these results are confirmed by Alam (2000), Al-Shami (2009), Karim (1996), Hanif (2011), Haron (1998), Chong and Liu (2009), Olson and Zoubi (2008), Benamraoui (2008) and Ariff (1995). They found that IBs offer current, savings and investment accounts as CBs, but with subject to Islam law and Shariah principles. They further discovered that IBs follow the Mudharaba in forming deposit accounts.

The two banking streams offer identical financing options, term financing, trade financing, house financing and lease financing options against collateral. But still many differences have been identified between two banks with regard to financing options as IB1 follows Shariah product concepts such as Mudarabah, Musyaraka, Murabaha, DiminsihingMusharaka, Ijara, Wakala, Import Murabaha and Import Musawamma as well as PLS paradigm in offering financing solutions to its customers. Hence under PLS ratio, IB1 and its borrowers share the profits on an agreed ratio and the losses are shared according to their capital contribution. On the other hand CB1 offers financing options based on interest.

Further, IB1 does not offer financing solution or invest in organizations that operate in unethical or socially harmful industries such as liquor, gambling and tobacco irrespective of their profitability. In the case of CB1, they do not face such restrictions and
hence lend to borrowers who have the creditworthiness. In a case of default or delaying the loan instalments, CB1 charges an extra interest from the borrowers and this charge is considered as an income for them. But in the case of IB system, IB1 does not charge an extra amount for the delay but they have the opportunity to charge a penalty if only it is stated in the agreement. But IB1 cannot include it as income and instead the amount is transferred to a separate charitable fund. Mostly, term financing facilities tend to dominate in two banks among other financial options. (Figure 1) These findings are consistent with the findings of Alam (2000), Karim (1996), Wilson (1987) and Haron (1998)

Figure 1. Deposit Composition – IB1 and CB1

![Deposit Composition Chart]

Source: Researcher’s own construction (based on the annual reports of 2011 of two banks)

As CB1, IB1 offers other fee based products such as treasury products to customers but following Shariah principles. Further, CB1 tends to offer fund transfers, pay and standing orders, safe deposits lockers and pawning facilities while IB1 only offers fund transfers, pay and standing orders and they do not offer safe deposits lockers and pawning facilities to its customers at present.

When considering the investment in two streams, IB1 only invest in the securities and the organizations that are ethical and interest free. However, CB1 is not subject to such restrictions and they have the opportunity to invest in the sectors and securities that they intend to invest. Further, IB1 holds deposits with other CBs, but under its Islamic window. Thus IB1 only places deposits with Islamic financial institutions and they cannot invest as intended like CB1. Investment sectors of the two banks are tending to differ, but they both cater to agriculture, manufacturing, construction, traders, infrastructure as well as financial and business services sectors. Traders dominate CB1 followed by construction sector, while traders dominate in IB1, followed by manufacturing and agriculture sector. (Figure 2)

Figure 2. Exposure of Financing of Banks in Common Sectors – IB1 and CB1

![Exposure of Financing Chart]

Source: Researcher’s own construction (based on the annual reports of 2011 of the two banks)

It is evident that IB1 and CB1 offer identical products to customers, but still there are differences among two systems due to the fact that unlike to CB1, IB1 follow Shariah principles, Islamic law and Shariah product concepts in providing these products. As a result though the products and services of IB1 have identical features as of CB1, the philosophy and the operations of two banks are deemed to be different from one another.

IV. CONCLUSION

Findings concluded that the Islamic banks and the conventional banks enclose differences as well as similarities in their framework specifically pertaining to the aspects functions and products structure. This is mainly driven by the major principles of interest free paradigm, Profit and Loss Sharing paradigm and Shariah principles for the emergence of unique structure that differentiate an IB from general CBs. Differences have been highlighted more than similarities between these two systems which confirmed that Islamic banking is not a mere copy of conventional banking as follows.

Functions: CBs as well as IBs perform multiple functions such as deposit mobilization, agency services and general utility services to meet the needs of banking customers. Though IBs perform
identical functions as CBs, their functions are unique than CBs as IBs function in accordance with Shariah principles and interest free framework, whilst CBs operate within the framework of interest and they do not follow any religious law as Shariah. However, both systems place a major emphasis on deposit mobilization than other functions as they earn higher income by advancing loans. IBs exist to achieve the objectives such as socio-economic justice, fairness and equality, whereas CBs main consideration is to maximize returns. Furthermore, IBs are required to develop a customized information system that supports interest free products, PLS paradigm and Shariah principles in performing these functions. Hence, they do not adopt current banking software systems as CBs, as those softwares’ are developed based on interest products.

Products and services: Both CBs as well as IBs offer current, savings and investment accounts to baking customers based on interest and latter on PLS ratios which are pre-decided. But the actual profits and loss shared depend on the monthly earnings of IBs. Therefore, profit rates to customers of IBs are subject to change according to its monthly profits. Unlike CBs, IBs follow Shariah product concepts Mudharaba in forming savings and investment accounts. Thus IBs offer more profits rates to saving accountholders and less profit to investment account holders. Further, the term deposits tend to dominate in CB sector, while savings deposits dominate in IB sector. The two banking streams offer identical financing options, term financing, trade financing, house financing and lease financing options against collateral. But still many differences have been identified between two banks as IB follows Shariah product concepts such as Mudarabah, Musyarakah, Murabaha, Diminishing Musharaka, Ijara, Wakala, Import Murabaha and Import Musawamma as well as PLS paradigm in offering financing solutions to its customers. Hence, under PLS ratio, IBs and borrowers share the profits on an agreed ratio and the losses according to capital contribution. In contrast CBs offer financing options based on interest.

Further, IBs do not offer financing solution or invest in organizations that operate in unethical or socially harmful industries such as liquor, gambling and tobacco irrespective of their profitability. In the case of CBs, they do not face such restrictions and lend to borrowers who have creditworthiness. In a case of default or delaying the loan instalments, CBs charge an extra interest from the borrowers and it will be an income for them. But in IB system, they cannot charge an extra amount for the delay but they have the opportunity to charge a penalty if only it is stated in the agreement. But IBs cannot include it as income and instead it is transferred to a separate charitable fund. Mostly, term financing tend to dominate in two banking systems among other financial options.

When considering the investment in two streams, IBs only invest in the organizations that are ethical and interest free. However, CBs are not subject to such restrictions and have the opportunity to invest in the sectors that they intend to invest. Further IBs only place deposits with Islamic FIs and they cannot invest as intended like CBs. Investment sectors of two streams are tend to differ, but they both cater to agriculture, manufacturing, construction, traders, infrastructure as well as financial and business services sectors. Traders dominate CB sector followed by construction sector, while traders dominate in IBs, followed by manufacturing and agriculture sector.

The explanations for differences between two banking systems have been majorly driven by the Islam law and the application of Shariah principles. Islamic banks adhere to Islamic laws and Shariah principles in addition to standard banking rules in performing banking activities while conventional banks only follow standard banking regulations.

At present, Islamic banking system is still in its initial stage in Sri Lanka and is required to take steps in developing the system parallel to conventional banking system as it is beneficial to the customers as well as to the economy in a way of employment and earning generation. This study suggests important implications to academicians, researchers, policy makers, bankers, and customers to explore the potential benefits of Islamic Banking.

Based on the findings, this study indicates the following avenues for further research. First since the present study focus on only on functions and product structure, the future researchers can extend the study by adding more variables of their interest and carryout a comparison between IBs and CBs. Another opportunity for future research exists as a similar study can be conducted in other
financial sectors to identify the similarities and the differences in their operations such as comparing conventional and Islamic leasing companies, insurance companies etc. This study is conducted based only one IB and only one CB. However it would be more worthwhile if a comparison is made with more IBs and CBs in SL. Hence future researchers can undertake a study to compare IBs with Islamic windows of CBs. On the other hand they can carry out similar research by including Islamic windows of CBs too.

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BIOGRAPHY OF AUTHORS

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Abstract — Contemporary concepts of information and communication technology and implementation strategies to banking services have become a significant matter to all banks in Sri Lanka. The advancement in technology has played an important role in improving service delivery standards in the banking industry. At present, Sri Lanka has a liberalized telecommunications market that has huge impacts on the economic and social development of the country. The Sri Lankan government has initiated several projects, emphasizing the need in rural areas and to provide unrestricted sources of information to all its citizens. When compared with the development of information and communication technology in the country, the demand for Internet Banking facilities is not at a significant level. Therefore, the main objective of this research study was to analyse the demographic factors of IB users and IB non-users in Sri Lanka. This study incorporates both primary and secondary data. Primary data were collected by utilizing semi-structured interviews and a customer survey of the selected banks in Sri Lanka: private bank (Sampath Bank), government bank (Bank of Ceylon) and a foreign bank in Sri Lanka (HSBC). The questionnaire was mailed and handed over to the customers of each bank along with a postage-paid return envelope and a cover letter explaining the purpose of the study. A total of 253 questionnaires were received resulting in a response rate of about forty two percent. However, only 240 questionnaires were useable as in the remaining questionnaires, substantial portions were not filled in. Therefore, the samples include 120 IB users and 120 IB non-users. The convenience sampling method was employed to select the sample of IB and IB non-customers for this study. Analyses of the ungrouped binary data were based on a binary Logistic Model and Statistical Measurements: Central Tendency, Dispersion and Skewness. Data were analyzed using Eviews version 5 application to strengthen the accuracy of results. McFadden $R^2$ ($R^2_{McF}$), $P$, and Likelihood Ratio (LR) Statistic tests were utilized for testing the goodness of fit, statistical significance of the parameters and for testing the overall significance of the model. In addition, the Jarque-Bera (JB) test was used for testing Normality. The findings of this study have important implications for researchers in the field of IB, banks that are currently offering IB services as well as banks that are planning to offer such services. The outcomes of this research can be applied to developing countries in the region in general.

Keywords— Internet Banking, Demographic Analysis, Banking in Sri Lanka

I. INTRODUCTION

The term Internet Banking (IB) refers to the use of Internet technology to offer banking facilities to remote clients. Pikkarainen et al (2004) defined Internet Banking as an ‘Internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments’. According to the Oxford English Dictionary (2014), electronic banking is banking transactions carried out electronically without involving the physical deposit or receipt of cash or checks; maintenance of a bank account by means of computer and telecommunications equipment and software. E-banking is providing the customers their banking information via diversified delivery channels that can be accessed through different technological devices i.e. a computer or a cell phone with built in browser utility or telephone or any other digital technology. The above two definitions show that IB is a sub category of E-banking. The usage of the Internet is rapidly increasing in Sri Lanka. However, the usage of IB is very slow compared to the increase of Internet users (Weerasekara, 2011). Despite the recent improvements in IB, there are still some constraints, mainly security related issues and some other factors, which contribute to the hesitations of
individuals’ IB adoption (Arslan, 2012). The main objective of this research study was to analyse the effect of demographic variables of banking customers on IB adoption in Sri Lanka.

The findings of the present study were subjected to few limitations: (i) Due to the initiation stage of Internet Banking services available in Sri Lanka, many customers are not aware of and/or do not understand the nature of Internet-based banking services. Many customers were not able to determine the level of the Internet Banking service available. (ii) The sample used for the study was from specific geographical areas of Sri Lanka. Thus, generalization of the findings of this study is limited to some extent. (iii) Some of the variables of the model were taken from the literature review and others were taken from personal reflection. It is possible, however, that other variables that were not retained could have had a significant impact on the adoption of Internet Banking. (iv) The ‘Questionnaire II’ was designed for respondents who had not adopted Internet Banking. Therefore, the respondents had found certain questions difficult to understand due to the lack of technical knowledge. (v) The proposed binary logistic model does not utilize interactive variables as additional variables.

II. LITERATURE REVIEW

Kim, et al (2005) investigate determinants of Internet Banking adoption based on individuals’ demographic and financial characteristics and use of other electronic banking technologies. They examined the influence of adoption of Internet Banking on the likelihood of using cheques vs. direct bill payments as payment instruments. They showed that consumers’ demographic and financial characteristics and use of other electronic banking technologies play a significant role in the decision to adopt Internet Banking. Khan & Emmambokus (2011) assessed the factors that contribute to the adoption of Internet Banking in Mauritius. They concluded that factors such as age, income, service usefulness, risk factor, checking account frequency and Internet location are the main determinants for a person to adopt online banking. However, in developing countries, demographics such as gender, area of residence and marital status have been insignificant. Khan & Emmambokus (2011) suggest that banks should implement more marketing strategies to enhance Internet Banking usage and educate the public, especially low and middle-income earners and older aged people more about the benefits of this service. The researchers used a logistic regression model based on a sample survey to analyze the factors that influence Internet Banking. By using the surveyed data of 1240 customers, the researchers concluded that six explanatory variables namely age, income, risk, usefulness of Internet Banking, frequency of checking bank accounts and Internet location are significant. Factors such as age, income, service usefulness, risk factor, checking account frequency and Internet location are the main determinants for a person to opt for online banking. Chang (2006) found that traditional demographic variables such as sex, education, marital status, personal income level, housing type and residential location are not relevant indicators of whether Internet Banking will be taken up or not with the exception of age. Demographics do provide an indication of when Internet Banking will be taken up. Males, and in particular those over 45, are more likely to be early adopters than females. The main factors affecting the adoption of IB were explored by Singhal & Padhmanabhan (2008) based on respondents’ perception on various Internet applications. The study tries to examine whether there is any relation with the demographic variables and respondents’ perception about IB; and, whether the user and non-user perception differs. Margaret & Ngoma (2013) tested whether there is a relationship between the socio-demographic characteristics of consumers and internet banking adoption in Zimbabwe. The research highlighted that a positive relationship exists between internet banking adoption and educational level, income, age, gender and occupation. Onyia & Tagg (2011) examine the influence of seven demographic variables: age, gender, level of education, marital status, employment status, income level and area of residence on retail banking customers’ behaviours toward IB adoption in Nigeria. A sample of 500 customers was surveyed. The study concludes that gender, level of education, and employment status are the major demographic affecters of Nigerian banking customers’ attitudes to IB adoption.

The following hypotheses were derived from the empirical studies.

H1: Age significantly affects acceptance of IB
H2: Gender significantly affects acceptance of IB
H3: Marital status significantly affects acceptance of IB
H4: Educational background significantly affects the acceptance of IB
H5: Incentives given by the bank to promote IB significantly affects acceptance of IB
H6: Distance to the bank branch significantly affects the acceptance of IB
H7: Income significantly affects acceptance of IB
H8: Awareness significantly affects acceptance of IB
H9: Trust significantly affects acceptance of IB

III. RESEARCH METHODOLOGY

A. Sample and Data
This study incorporates both primary and secondary data. Primary data were collected by utilizing semi-structured interviews and a customer survey of the selected banks in Sri Lanka: private bank (Sampath Bank), government bank (Bank of Ceylon) and a foreign bank in Sri Lanka (HSBC). The convenience sampling method was employed to select the sample of IB and IB non-customers for this study. Secondary data were obtained from the various publications of the Ministries of Technology and Research, relevant banks’ publications and official websites. Primary data for this research were gathered by posting and handing over the questionnaire to 600 customers of the selected three banks. The questionnaire was mailed and handed over to the customers of each bank along with a postage-paid return envelope and a cover letter explaining the purpose of the study. A total of 253 questionnaires were received resulting in a response rate of about forty two percent, which is typical for a study of this nature. However, only 240 questionnaires were useable as in the remaining questionnaires, substantial portions were not filled in. Therefore, the samples include 120 IB users and 120 IB non-users.

B. Analysis of Data
Analysis of the data was based on a binary Logistic Model for ungrouped binary data and statistical measurements: Central Tendency, Dispersion, Skewness, and graphs/tables. The following Logit model was utilized to analyze the demand for IB.

\[ DB = f(AG, GE, MS, ED, PR, DS, IN, AW, TR) \]

Where,
DB = Demand for Internet Banking (1 = users, 0 = non-users)
AG = Age
GE = Gender
MS = Marital status
ED = Educational background
PR = Incentives given by the bank to promote IB
DS = Distance to the bank branch
IN = Income
AW = Awareness
TR = Trust

Thus,
\[ DB_i = \frac{P_i}{1-P_i} = \alpha + \beta_1 AG_i + \beta_2 GE_i + \beta_3 MS_i + \beta_4 ED_i + \beta_5 PR_i + \beta_6 DS_i + \beta_7 IN_i + \beta_8 AW_i + \beta_9 TR_i + u_i \]

Here, \( \alpha \) is constant and \( \beta_s \) are the coefficients estimated, and \( u \) is the error term. Data were analyzed using Eviews version 5 application to strengthen the accuracy of results. MS Excel software was also utilized for the purpose of analysing the collected data. McFadden \( R^2 (R^2_{\text{McF}}) \), P, and Likelihood Ratio (LR) Statistic tests were utilized for testing the goodness of fit, statistical significance of the parameters and for testing the overall significance of the model. In addition, the Jarque-Bera (JB) test was used for testing Normality. Multicollinearity was tested by running the regression model, omitting one variable each time and observing how the coefficients and their relevant standard errors change.

IV. DATA ANALYSIS AND FINDINGS

The banking sector plays a pivotal and responsible role in channelling public deposits for investment and consumption lending that ultimately assists in improving the standard of living and quality of life of the citizens of the country. Table 1 shows the development of banking sector in Sri Lanka.

Table 1: Developments of the Banking Sector in Sri Lanka-2013

<table>
<thead>
<tr>
<th>Item</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensed Commercial Banks (LCBs)</td>
<td>24</td>
</tr>
<tr>
<td>Domestic banks</td>
<td>12</td>
</tr>
<tr>
<td>Foreign banks</td>
<td>12</td>
</tr>
<tr>
<td>Total no. of bank branches and other outlets</td>
<td>6,487</td>
</tr>
<tr>
<td>Total no. of Automated Teller Machines (ATM’s)</td>
<td>2,538</td>
</tr>
<tr>
<td>Banking density: no. of bank branches per 100,000 persons</td>
<td>16.8</td>
</tr>
</tbody>
</table>

Source: Central Bank of Sri Lanka, 2013
It is often argued that there are demographic differences between IB users and IB non-users. It is also believed that the younger generations who are more computer literate and have an affinity to the web are more likely to adopt Internet Banking. Education level and income level significantly have an effect on the adoption of Internet Banking. Therefore, the demographic features of the IB users and the IB non-users in the sample respondents were analysed. Findings show that there is no significant difference between the mean ages of the two groups. The mean age of the IB non-users was 35 years while the IB users was 34 years. As per the graph 1, 43 percent of IB users are working in the private sector whereas it is 29 percent for the IB non-users.

![Graph 1: Employment sector of the IB users and IB non-users](image)

The percentage of graduates and undergraduates in the group of IB users is 85 percent while the IB non-users is 38 percent, thus indicating that the two groups are not equal in terms of level of education. There is a significant proportion (27%) of IB non-users among those who have only secondary education. A significant difference can be seen in the average monthly income. The mean monthly income of the IB users was Rs. 59908.33 and for the IB non-users it was Rs. 40341.67. IB customers have more than one type of account. Thus, 46 percent of IB customers hold accounts in terms of saving, current and term deposits. A significant feature is that 89 percent of IB non-users have only savings accounts. Any one of both categories does not use current accounts alone. When the distance between the bank branch and the customer’s residence is considered, the mean value of distance for IB non-users is 4.84 KM and that of IB users is 3.69 KM.

Graph 2: Education level of IB users and IB-non users

According to the survey, 52 percent of IB non-users have Internet access. About 69 percent of them are facilitated by Mobitel or Dialog. Also about 89 percent of IB users have Internet facilities through Mobitel or Dialog. Out of 120 IB non-users, 22.5 percent of customers visit the bank branch with their son or daughter and 10 percent visit the bank branch with their husband or wife.

Graph 3: Visit to the bank branch by IB non-users

Balance enquiry and payment of utility bills are the transactions that have a higher frequency among the two groups. The graph 4 exhibits that 36 percent of the customers have adopted the Internet Banking facility because of influence or recommendations by colleagues and peers. Self-awareness is at a significant level (27 percent) when compared with other influencing factors. As per the opinion of the customers, the bank leaflets had not contributed to the decision of the customers.

Graph 4: Influencing groups on decision to adopt IB
Table 2 indicates the factors that may compel people not to adopt Internet Banking services provided by their banks.

**Table 2: Factors that may compel people not to adopt Internet Banking services**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not know much about Internet Banking (IB)</td>
<td>65.83%</td>
</tr>
<tr>
<td>Use of computer or/and Internet is difficult</td>
<td>19.17%</td>
</tr>
<tr>
<td>IB web pages are confusing</td>
<td>0.00%</td>
</tr>
<tr>
<td>Using IB can be complicated</td>
<td>38.33%</td>
</tr>
<tr>
<td>Using IB is difficult to understand</td>
<td>35.83%</td>
</tr>
<tr>
<td>IB transactions involve with complex procedures</td>
<td>17.50%</td>
</tr>
<tr>
<td>IB is only for computer experts</td>
<td>0.00%</td>
</tr>
<tr>
<td>Face to face interaction is important</td>
<td>32.50%</td>
</tr>
<tr>
<td>Absence of human element (people)</td>
<td>35.83%</td>
</tr>
<tr>
<td>Third party may be able to access my financial details</td>
<td>56.67%</td>
</tr>
<tr>
<td>Third party may track my bank usage patterns</td>
<td>28.33%</td>
</tr>
<tr>
<td>I am worried about the security of Internet Banking</td>
<td>71.67%</td>
</tr>
<tr>
<td>Upgrade browser software discourage Internet bank usage</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

As per Table 2, the most influencing factors for not adopting IB services are the security of Internet Banking (71.67%) and poor awareness on IB services (65.83%). Further, the majority of IB non-users have a fear on access for their financial details by third parties. The absence of the human element (people) and face to face interaction are also significant factors for not adopting the Internet Banking services provided by their banks.

The objective of utilizing the Logit model was to examine and analysis the impact of selected demographic and other variables on demand for Internet Banking in the selected three banks. In order to identify the outliers of the gathered data, box-plots presented in graphs 5 and 6 were used.

According to Graphs 5 and 6, ‘distance to bank branch’ and ‘customer income’ are shown outliers. The following summary output was derived after removing the outliers.

**Table 3: Results of the Logit Model for ungrouped binary data without outliers**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG</td>
<td>-0.262553</td>
<td>0.054927</td>
<td>0.0000</td>
</tr>
<tr>
<td>GE</td>
<td>-0.221880</td>
<td>0.438233</td>
<td>0.6126</td>
</tr>
<tr>
<td>MS</td>
<td>1.662916</td>
<td>0.580714</td>
<td>0.0042</td>
</tr>
<tr>
<td>ED</td>
<td>0.559911</td>
<td>0.282648</td>
<td>0.0038</td>
</tr>
<tr>
<td>PR</td>
<td>-0.346694</td>
<td>0.119885</td>
<td>0.0000</td>
</tr>
<tr>
<td>DS</td>
<td>-0.112038</td>
<td>0.066331</td>
<td>0.0912</td>
</tr>
<tr>
<td>IN</td>
<td>7.76E-05</td>
<td>1.73E-05</td>
<td>0.0000</td>
</tr>
<tr>
<td>AW</td>
<td>-0.244077</td>
<td>0.128693</td>
<td>0.0579</td>
</tr>
<tr>
<td>TR</td>
<td>1.114158</td>
<td>1.9725931</td>
<td>0.0000</td>
</tr>
<tr>
<td>C</td>
<td>15.63985</td>
<td>2.871321</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
Mean dependent var 0.508547
S.D. dependent var 0.500999
S.E. of regression 0.331335
Akaike info criterion 0.754653
Sum squared resid 24.59143
Schwarz criterion 0.902316
Log likelihood -78.29442
Hanna-Quinn criter. 0.814191
Restr. log likelihood -162.1623
Avg. log likelihood -0.334592
LR statistic (9 df) 167.7357
McFadden R-squared 0.517185
Probability (LR stat) 0.000000

Substituted Coefficients:
-----------------------------------
DB = 1 - @LOGIT(-0.2625526376*AG - 0.2218804702*GE + 1.662915936*MS + 0.559910624*ED - 0.3466938922*PR - 0.1120384174*DS + 7.757214352e-005*IN - 0.2440766814*AW - 1.114158266*TR + 15.63984631))

For a normally distributed variable, S=0 and K=3. The Jarque-Bera (JB) test of normality is a test of the joint hypothesis that S and K are 0 and 3, respectively. The value of the JB statistics is expected to be zero. Therefore,

H₀: Residuals are normally distributed
H₁: Residuals are not normally distributed

Graph 7 depicts the Histogram of the residuals of the Logit Model. Since the JB statistics of the Logit model is 8886.494 and the p value is zero, the null hypothesis is rejected. Together all the regressors have a significant impact on the dependent variable, as the LR statistics is about 167.74, whose p value is about zero and reject the null hypothesis that all the coefficients are simultaneously equal to zero. However, coefficients of GE (Gender) DS (Distance to the Bank Branch) and AW (Awareness) are not statistically significant as the p values are greater than the common alpha level of 0.05. Each slope coefficient in the estimated regression model is a partial slope coefficient and measures the change in the estimated logit for a unit change in the value

Graph 8: Actual, fitted and residual graph of the Logit Model

Likelihood ratio (LR) statistics with 9 degrees of freedom is 167.7357 and probability (LR stat) is 0.000000.

H₀: all the coefficients are simultaneously equal to zero
H₁: not all the coefficients are simultaneously equal to zero

Graph 7: Histogram of the residuals of the Logit Model
Graph 8: Actual, fitted and residual graph of the Logit Model.

The assumption normality of u is not essential if the sample size is large. Therefore, the usual test procedures are still valid asymptotically (large sample). Value of the $R^2_{McF}$ in the Logit model is 0.52. Since the regressand in the logit model takes a value of 1 or zero, if the predicted probability is greater than 0.5, it is classified as 1, but if it is less than 0.5, it is classified as 0. However, in the binary regression model, the goodness of fit is of secondary importance.
of the given regressor holding other regressors constant. Thus, the ED coefficient of 0.56 means, with other variables remains constant, but if ED increases by a unit, on average the estimated logit will increase by about 0.56 units suggesting a positive relationship between the two. The coefficient value of AG depicts a negative relationship between age and IB adoption. A one year increase in age (AG) decreases the odds of adopting IB by a factor of 0.769, adjusting for other explanatory variables. There is a positive relationship between education level and IB adoption. The odds of IB adoption are 1.751 times the odds of IB non-adoption for each one level increase in education (ED), adjusting for other explanatory variables. The odds ratio of 0.7070 relevant to PR indicates that the opinion of the customers on incentives given by the bank to promote IB and IB adoption are negatively related. For one unit increase in the degree of opinion on incentives, the odds of IB adoption is lower by 29.30 (=100-70.70) percent, adjusting for other explanatory variables. The odds ratio of 1.000 relevant to income (IN) indicates that one unit change in income results same probability of IB adoption and IB non-adoption, adjusting for other explanatory variables. There is a negative relationship between IB adoption and opinion on the degree of importance of trust. For one unit increase in the degree of opinion on trust, the odds of IB adoption is lower by 67.18 percent, adjusting for other explanatory variables. The odds ratio of 0.7070 indicates that one unit increase in the degree of opinion on trust, the odds of IB adoption is lower by 67.18 percent, adjusting for other explanatory variables. Consumers who have chosen not to adopt Internet Banking said that they were happy with their existing banking methods and expressed concerns over uncertain online security. Demographic variables such as age, education, marital status, trust are the relevant indicators of whether Internet Banking will be taken up or not with the exception of gender, distance to the bank branch and awareness. The Internet bank users appear to come from a more affluent stratum of society in Sri Lanka. This is not surprising since the more affluent are often the trendsetters and they are also less likely to be concerned with the risk of IB transactions in the light of their greater financial security and resilience. The fact that 100 percent of IB users hold executive positions tends to well establish this notion. IB customers are more educated than the IB non-customers. Most of them are at least high school graduates. However, most IB non-customers have only secondary education. It was also observed in this study that the IB users reside at the same distance from their bank branch of operation as the non-IB users reside from that of theirs. IB non-users would normally visit the bank branch with their family members, which in turn would raise their transaction cost. In Sri Lanka, banks as the Internet Banking service providers and customers as the beneficiaries are still not making real use of Internet Banking adequately. As a developing country it may be due to various problems and difficulties. Banks should implement strategies to increase IB usage and educate the public. Effective laws will vastly accelerate the development of Internet Banking in Sri Lanka.

IV. CONCLUSION

Analysis of the data was based on a binary Logistic Model for ungrouped binary data and Statistical Measurements: Central Tendency, Dispersion, Skewness, and graphs/tables. The objective of the research was to examine the impact of selected demographic and other variables in demand for Internet Banking in the selected three banks. There appears to be a dearth of research efforts to determine the demographic factors affecting the acceptance of Internet Banking services. This gap was filled by this research effort. Coefficients of gender, distance to the bank branch and awareness are not statistically significant. Customers who are married are more than 5 times likely to get registered for the Internet Banking service than customers who are not married, other things remain the same. The opinion of the customers on incentives given by the bank to promote IB and IB adoption are negatively related. For one unit increase in the degree of opinion on trust, the odds of IB adoption is lower by 67.18 percent, adjusting for other explanatory variables. Consumers who have chosen not to adopt Internet Banking said that they were happy with their existing banking methods and expressed concerns over uncertain online security. Demographic variables such as age, education, marital status, trust are the relevant indicators of whether Internet Banking will be taken up or not with the exception of gender, distance to the bank branch and awareness. The Internet bank users appear to come from a more affluent stratum of society in Sri Lanka. This is not surprising since the more affluent are often the trendsetters and they are also less likely to be concerned with the risk of IB transactions in the light of their greater financial security and resilience. The fact that 100 percent of IB users hold executive positions tends to well establish this notion. IB customers are more educated than the IB non-customers. Most of them are at least high school graduates. However, most IB non-customers have only secondary education. It was also observed in this study that the IB users reside at the same distance from their bank branch of operation as the non-IB users reside from that of theirs. IB non-users would normally visit the bank branch with their family members, which in turn would raise their transaction cost. In Sri Lanka, banks as the Internet Banking service providers and customers as the beneficiaries are still not making real use of Internet Banking adequately. As a developing country it may be due to various problems and difficulties. Banks should implement strategies to increase IB usage and educate the public. Effective laws will vastly accelerate the development of Internet Banking in Sri Lanka.
Effective privacy protection laws considering the Internet environment will help to build trust and consumer confidence.

REFERENCES


BIOGRAPHY OF THE AUTHOR

Author is a senior lecturer in the field of International Economics and Supply Chain Management at Kotalawala Defence University, Sri Lanka. His research interests include Internet Banking, Inflation and Outsourcing. He has presented more than 10 research studies at international conferences. He is a member of the editorial board of International Journal of liberal arts and social science. The author has supervised more than 10 master’s theses.
POSTER PRESENTATIONS
Abstract — In developing countries, development related population displacement has grown rapidly over the past few decades due to the compelling need for infrastructure as a result of fast growing population densities. Those displaced due to development projects are resettled by project planners, but have to face specific socio economic issues in their newly relocated areas.

This study focuses on identifying social, cultural and economic implications of evicted persons. The Southern Highway, the main development project was selected to examine this problem.

Both primary and secondary data sources were used to achieve the objective of this research. To collect the primary data from the units of sample the researcher used structured interviews and semi structured interviews. Guideline questionnaire along with the IRR Model was used to conduct the interviews. Other than this, researcher was able to carry out number of observations as prior to prepare the questionnaire as well as to check its accuracy of the answers given by the respondents.

Study Population of this study was 40 families which consist of 70 families who were living in that period.

Study samples have identified eight risks; Homelessness, Landlessness, Unemployment, Marginalization, Food insecurity, Increased morbidity and Mortality, Loss of common property and Services and Social disarticulation. In relation to that, the issues faced by resettled community can be divided three categories based on depth of problems.

Most affected problems were Physical Marginalization and Psychological Marginalization, Loss of Social and Cultural Value of ancestral home, Social Insecurity, Social Stress, Social Disarticulation, Landlessness, Deprivation of Social Capital. Breakdown the livelihoods, Loss of access to common property were the marginally effected problems and less effected problems were food insecurity and morbidity.

The broad ranges of problems are not only the economic risks, but also the social and cultural problems also contribute. Those are inter-related problems and doesn’t affect to the community equally therefore the dimensions of issues are differentiating from one another. One might think that the severances are high with the economic risks, but on the contrary social risks are severe than the economic ones. Due to the development projects, the environment in which the people lived in was subjected to harsh changes, the people lost their familiar environment and this can’t be evaluated through the scales of economy.

Keywords: Involuntary resettlement, involuntary displacement, risks, evicted people.

I. INTRODUCTION

Resettlement is a response to displacement, or involuntary movement. Displacement is a forced migration, where people move because of an external shock—whether it is a development project, a natural disaster or civil conflict. As same as Development induced displacement and resettlement (DIDR) occurs as a result of human driven economic activities, mainly related to large scale infrastructure projects such as irrigation, power, and roads. Resettlement is a socio cultural/economic process that happens initially to people rather than their physical environment (Muggah, 2008).

Involuntary resettlement is often a consequence of planned change generated by major development projects or programs. As a result of acquiring land for development projects, people are evacuated from their homes.
The main cause of involuntary resettlement is acquisition of their land and water resources for major development. According to that Southern Transport Development Project (STDP) was the first controlled access expressway to be built in Sri Lanka. It was constructed from Makumbura in Kottawa of the Western Province to Matara in the Southern Province covering a total distance of 128 kilo-meters.

Consistent with the position Report issued by the STDP to the project coordinating committee 10,271 lots were acquired for the Express Right Way. An estimated 1,3338 families have been displaced due to land acquisition displaced households as well as livelihoods (Ministry of Land, 2003).

The objective of this study was to identify social, cultural and economic implications of evicted people due to STDP.

II. THEORITICAL FRAMEWORK

The Model of Risks and Risk Avoidance (IRR Model) was applied to examine the issues being faced by the evicted community. This Model developed during the nineties by Michel M. Cernea Sociologist in cooperation with the World Bank.

IRR model has four functions. A) Predictive functions B) diagnostic functions C) Planning and problem resolving function D) Research function. Cernea has pointed out eight risks affecting displaced people. Such as; landlessness, joblessness, homelessness, social marginalization, increased mortality and morbidity, food insecurity, loss of access to common property and social disarticulation.

III. RESEARCH METHODOLOGY

Both primary and secondary data sources were used to achieve the objective of this research. To collect the primary data from the units of sample the researcher used structured interviews and semi-structured interviews. Guideline questionnaire along with the IRR Model was used to conduct the interviews. This questionnaire was designed by the researcher especially for the research objective. Other than this, researcher was able to carry out number of observations as prior to prepare the questionnaire as well as to check its accuracy of the answers given by the respondents.

The highest number of people has been evacuated from Galle district than other districts and even number of affected AGA divisions were reported from Galle district. ie.Bentota, Elpitiya, Karandeniya, Baddegama, Bope, Poddala, Akmeemana, Emaduwa and Galle Kadawathsathara hence, Karandeniya AGA division was selected from Galle district to get study population. Karandeniya AGA Division, which consisted different socio-economic features, was selected to get study sample. There were two resettlement locations in Karandeniya AGA Division, which are Pathirajawatte and Vilson estate. Among these two, evicted people are living in Pathirajawatte resettlement scheme was study sample for data collection.

A sample 40 evicted families was selected using systematic random sampling which could be including entire population to the sample. Sample frame was collected from the resettlement office in Galle. According to that researcher was able to select 40 families one after other.

Since this was mainly based on qualitative data, Anthropac method used to analyze the data and Relevant theory applied to describe field data.

IV. RESULTS

The analysis was based on empirical evidence focused on IRR Model. According to that it can be divided into three categories based on severity of the issues.

A. Highest Social issues
   (a) Physical Marginalization and Psychological Marginalization
   (b) Loss of Social and Cultural Value of ancestral home
   (c) Social Insecurity
   (d) Social Stress
   (e) Social Disarticulation
   (f) Landlessness
   (g) Deprivation of Social Capital

B. Marginal Social issues
   (a) Breakdown the livelihoods
   (b) Loss of access to common property

C. Lower Social issues
   (a) Food insecurity
   (b) Morbidity
Sample revealed several social implications. Physical Marginalization and Psychological Marginalization, Social and Cultural value of ancestral home, Social Insecurity, Social Stress, Social Disarticulation, Landlessness, Deprivation of Social Capital are the most significant implications of the community. These issues are interlinked and influence each other: Some play a primary role and others play a derivative role.

- **Physical Marginalization and Psychological Marginalization**
The main social issue was marginalisation among the evicted community under STDP project. The facets of marginalisation are multiple. The cultural status of displacers is belittled when they go to new relocation areas, where they are regarded as “strangers” and denied opportunities and entitlements. Psychological marginalization and its consequences are typically overlooked in the resettlement. For an example one elderly person said that, the high way is on his land (“Oya para thiyenne ape idame”). This statement has indicated that how much psychologically the person is affected by losing his land. Yet, cultural and behavioural impairments, anxiety and decline in self-esteem, have been widely reported from people. Further, they are labelled as “Pàrata Yatauna Aya” and “Àpu Aya” which in turn affects them psychologically. Though they have been received economical compensation the loss of their ancestral home (Maha Gedara) has caused loss of social and cultural value of “home.”

When they relocate in new locations, they have been selected in dispersed manner. Therefore neighbouring relationships have been pulled apart and it has affected their social security too. The people, who lived in the former village as neighbours and relatives, have been randomly resettled in the new locations. Such type of selection has caused to raise other social issues among them. It cumulates physical exclusion from a geographic territory with economic and social exclusion out of the set of functioning social networks.

- **Loss of Social and Cultural Value of ancestral home**
The compensation provided for the demolished shelters are made by not assessing a forecasted market value rather than its replacement value, the risk of homelessness has increased. The Sri Lankan Society basically built its homes of the offspring around the ancestral home called “Maha Gedara.” Most people who were affected by the highway have lived their whole life near their ancestral homes. Though they have been offered compensation for their houses, the loss of their Maha Gedara has caused loss of social and cultural value of “home.”

- **Social insecurity**
Social insecurity is the harshest problem, which was raised due to the random settlement. For an example insecurity among children was discovered by the research ie. When children came back from school to their homes, the parents used to let them stay at a neighbour’s place until they came after work. But when they were re-settle in new community this option was practically difficult to carry out.

- **Social Stress and Morbidity**
Research has documented that more vulnerable groups, such as the elderly, suffer increased morbidity and mortality rates as an effect of losing their prior homes. Exposure to the "social stress" inherent in forced relocation was highlighted as having differential consequences on mental health across age, gender, and marital and occupational status.

- **Social Disarticulation**
Social disarticulation is another severe problem facing them. The dis-integration of social support networks has far-reaching consequences. It compounds individual losses with a loss of social capital, dismantled patterns of social organization are hard to rebuild. Such loss is higher in projects that relocate people in a dispersed manner rather than in groups and social units. The research has found various manifestations of social disarticulation, such as growing alienation, loosening of intimate bonds, weakening of control on interpersonal behaviour and lower cohesions in family ties.

Dismantled social networks that once mobilized people to act around common interests and to meet their most pressing needs are difficult to rebuild. This loss is greater in projects which relocate families in a dispersed manner, severing their prior ties with neighbours, rather than relocating them in groups and social units. This study found various manifestations of social
disarticulation within the kinship system, such as the loosening of intimate bonds, growing alienation and anomie, the weakening of control on interpersonal behaviour, and lower cohesion in family structures. Resettlers' relationships with non-displaced kinsmen were eroded and interaction between individual families was reduced. As a result, participation in group activities decreased; Weddings and Arms giving were discontinued; and common burial grounds became shapeless and disordered.

- **Landlessness**
  
  People’s productive systems, commercial activities and livelihoods are constructed. This is the principle form of de-capitalization and pauperization of displaced people, as they lose both natural and man-made capital. Offering a small plot of land i.e. 20 perches and having to travel a long distance to utilize the previous unaffected lands in the native village are the results of landlessness. Compensation distributed among them was not adequate to acquire another plot of land in the same area where they lived-in earlier. In addition, the cultural symbolic value of the land was destroyed when land was acquired by the government for development projects i.e. loss of land inheritance.

  When land is acquired, the small businesses which were running along that land were not evaluated properly, hence when these people are resettled in other locations; their businesses face grave difficulties. For an example, take a small wood workshop business being done by a person. When he is resettled at a new location he will have to face the competition with other similar type of businesses in that locality thereby hindering his economic prospects. Further, these types of businesses contribute to the unemployment in that area and when the business is re-located to a new area, the unemployment increases in the previous area.

- **Deprivation of Social Capital**
  
  The disintegration of social support networks has far-reaching consequences. It compounds individual losses with a loss of social capital; dismantled pattern of social organizations are hard to rebuild. Such loss is higher with the evicted people since they have relocated in dispersed manner rather than in groups and social units. This sociological study found various manifestations of social disarticulation, such as growing alienation, the loosening of intimate bonds, weakening of interpersonal behaviour, and lower cohesion in family structures.

  - **Breakdown the livelihoods**

    The risk of losing wage employment is very high both in rural and urban displacements for those employed in enterprises, services or agriculture.

    Research findings point out two ways in losing jobs.

    a) They have lost access to land owned by others which are cropped, either leased or shared,

    b) Inability to find job opportunities from the new urban areas.

    Though the project committees have proposed job replacement systems, they have not been implemented. Most of the communities who were affected are rural communities, which is 93%. Since belonging to a rural community, the whole living system was based on land based production and self-employment through these production systems. These land based production systems are collapsed when the resettled people are unable to find adequate lands which sustain cultivation in the resettled areas.

  - **Loss of access to common property**

    Middle income farm households do not become landless, but became smallholders. Marginalisation and lack of access to common resources are the marginal risks in the community. The causes of marginalisation occur when the infrastructure & services are discontinued after completion of the particular project and these programs discontinue integrating with the host community. For an example play ground, some roads still have not been completed in the new location. The participation and vote of the affected people are not considered when re-establishing common resources such as wells, play grounds, etc. Hence the resettled people have to travel long distances from their resettled homes to gain access to those facilities thus weakening the common access to these resources.

  - **Food Insecurity**

    Cernea describe in her theory, forced uprooting increases the risk that people will fall into
temporary or chronic under nourishment, defined as calorie-protein intake levels below the minimum necessary for normal growth and work.

According to the field evidences, though there was prosperity of edible things in the environment of their former villages, the new settlement does not contain riches of that sort, thus causes for food insecurity. Food insecurity and under nourishment are both symptoms and results of inadequate resettlement. During physical relocation, sudden drops in food crop availability and incomes are predictable. Subsequently, as rebuilding regular food production capacity at the relocation site may take years, hunger or under nourishment tends to become a lingering long-term effect. Example they have been provided with coconuts, jack fruits, green leaves etc. from their own land. But in new location they have not enough space for growing such trees. Nutrition-related risks reinforce morbidity and mortality risks (see further) and largely depend on whether the primary issues of landlessness and joblessness are effectively counteracted.

The Following figure shows mutual linkage of social risks that revealed from the research.

![Fig.1. Inter-relationship between Social Implications](image)

Marginalization affects to disorganise their social integration when the new projects stop their investment services and infrastructure after completion and the integration with the society abruptly. Social articulation is mandatory to all societies because strong social relationships which tend to formulate amongst the people tend to increase the personal support amongst that particular community.

In other words, the poor relationships that occur will generate alienation amongst society. When people are being alienated they tend to isolate the people from their family ties, labour and society. Thus they will be disappointed with regard to the society they live-in. These circumstances in turn make an increase in social issues such as social stress among the community, loss of social capital and inter personnel support. The traditional Sri Lankan Society was based on a basic labour exchange system. They helped each other on common occasions such as paddy cultivation, funerals, alms giving (daana) and community work (Shramadhana). But after the resettlement, community has no strong relationships and sense of each other and the ad hoc settlement pattern is the key cause affecting these conditions. When they are placed in a new location where the neighbours are unknown to them, they will try to live separately and drawback from making new ties with that new society. They grow into individualism instead of social conciliation and social cohesion. Finally, all these facts and causes and leads to social security and it become the root cause for marginalisation again and the cycle completes.

The loss of social organisations among the resettled have been directly affecting to this. When searching for solutions to eradicate this situation and to break the chain of events occurring continuously, it was learnt from this research that by establishing community projects comprising of social organisations where the community of that particular location and the newly resettled are to work hand in hand, is the best solution. This creates an environment where the new and the host people in that society will not knowingly work as one unit to reach the objectives of the project. As time goes by, new ties and inter relationships will tend to grow among these two entities thus the feeling of isolation and insecurity will be forgotten and harmony will blossom. These two entities will become a single society and the cycle of social risks will dissolve. New employment opportunities will also make these bonds stronger and another is when those resettled and the people in that society work together for the common good, they become accepted to that society.

V. CONCLUSION & FURTHER WORK

This research highlights several relevant issues emerged in the process of land acquisition. Based on this experience with case study on highway construction, it is observed that the community network has broken. Community integration has dismantled; common property has eroded; income
sources have lost; community insecurity and marginalization are arising in the new location.

The IRR model captured a broad range of issues and it is evident that not only the economic issues, but the social and cultural issues also contribute. Those are inter-related issues and do not affect the community equally. Therefore the dimensions of issues are differentiating from one another. One might think that the severances is high with the economic issues, but on the contrary, the social issues are severe than the economic ones. Due to the development projects, the environment in which the people lived in was subjected to harsh changes, the people lost their familiar environment and this can't be evaluated through the scales of economy.

This can be accomplished through targeted strategies such as:

a. Implementing the involuntary resettlement policy issued by Asian Development Bank.

b. When implementing resettlement plan points given in Social Impact Assessment (SIA) report to be considered.

c. Involving the community for the risk analysis and give considerable amount of importance their ideas when making decisions.

d. Establishing new social institutions and integration programs.

e. Building good relationship between community and project implementation officers.

Identification and anticipation of trends and risks offers an opportunity to take policy and project actions that could counter the risks.

Finally, some recommendations can be acquaint minimising social issues in the resettlement. Two basic strategies may be pursed in the resettlement plan for economically and socially re-establishing those newly resettled persons. One is land –based strategies and other one is non-land based strategies. Those displaced people are from urban or semi urban settings, they usually depend on non-land based livelihoods. i.e. The service sector, industrial employment, self employment etc. but sometimes if they possess also some farming lands. The approach to their situation should take into account, in addition to their need for new housing plots, their access to employment opportunities and when warranted, to some land for farming or gardening.

In the same time when people resettle, community preference should be obtain by project planner to relocate them. The majority preference of those displaced to move in group as cultural/social units. i.e. as entire kin group, extended family, ethnic group, neighbourhood, whole hamlet or village unit etc also bears upon their potential to get socially organized economically productive quickly at the new location. This preference must be supported as long as it does not adversely affect the choice of feasible re-development options or genuine preference of some for individual self relocation. Such support for relocation as cultural units would protect an important social resource the viable patterns of group organization which can act immediately at the new location cushion disruption caused by resettlement.

The consequences of development project and the associated resettlement have a very strong impact on virtually all areas of life both of individuals and of larger communities.

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Empowering People through Education from the Perspective of Millennium Development Goals

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Abstract—Education plays a significant role in people’s empowerment which ultimately leads to sustainable development in any country. Therefore, this crucial position held by the education has become a universal acceptance. Further, as revealed by the South Asian Development Report, if the men and women are not empowered by the education and the health, the sustainability won’t be a reality (2004). Moreover, it has emphasized the education as one of essential components of growth process.

Generally, the term empowerment refers to a multi-dimensional social process that enhance diverse of human capabilities. Further it is relevant to all the aspects that boost competences of human beings which are crucial for the development. Empowering people can be varied from the individual level to the community level. Even more it can go beyond the community level reaching up to the international level. Therefore, it is imperative to study how people can be empowered through the education since education is recognized as a key player of the human empowerment.

Main objective of this study is to explore the potential of education to empower people as human development is considered as one of central pillars of development. Concurrently, this study aims to examine the applicability of the Millennium Development Goals to such scenario focusing on its most apposite segments. Mainly this research would be an archival research which would base on secondary sources. Additionally, the study would focus on the United Nations reports and statistics.

This research finds that education is an indispensable factor regarding empowering people. Furthermore, this research reveals that human empowerment is a multi-commitment task which is directly applicable to development process. Concurrent to that, this research has highlighted the relevance of the Millennium Development Goals to the implementation of empowering people through education. Moreover, this study finds that empowering people through education can generate apparatus required for the development process leading to profound social changes at both personal and societal level.

Keywords—Education, Sustainable Development, Millennium Development Goals

I. INTRODUCTION

The Millennium Development Goals (MDGs) was set by the United Nations in the year 2000, with the aim of achieving eight major development goals by the year 2015. This crystallized the growing consensus which emerged during the 1990’s, namely the poverty reduction and the provision of basic social services need to be at the centre of development policy. From these eight goals achieving Universal primary Education is the second and one of the key Goals in the Millennium Development Goals. Out of the eight Millennium Development Goals, two are directly related to education, they are: (central role of education in the MDG)

In general way millennium development goals can be considered as universal framework for development. It is adopted by all the members of UN in 2000. Mainly it provides a holistic approach for developing countries to achieve the goals of sustainable development. Further United Nations has intensified the significance of education for sustainable development. As revealed by new research, learning failures have high costs for countries. (MDG global monitory report, 2007). Therefore it is obvious that MDG’s are directly linked with promoting education. Similarly education can considered as one of central pillars of empowering people with essential skills and capabilities. Moreover, the educational
development will increase the opportunities for individuals while make them more independent. In this scenario, Millennium Development can accelerate the development of other areas focussing on educational enhancement.

Achieving MDG 2, universal primary education by 2015 will allow every child to complete full course of primary education creating a sound background for sustainable development. In addition to that, this achievement would lead to one of indispensable requirements of development. As MDG 3 the promotion of gender equality and the empowerment of women with, specifically, the elimination of gender disparities at primary and secondary school levels by 2005 and across all education levels by 2015. Further this increase the participation in development endeavours irrespective of factors such as gender disparities. This indicates that Education plays a significant role empowering people which ultimately lead to sustainable development. Therefore education has become a Universal acceptance. In the South Asian Development Report it has being revealed that if men and women are not empowered by education and health, the sustainability won’t be a reality (2004). It has also emphasized that education as one of the essential components of growth process.

One of the ways of achieving universal primary education for all boys and girls by the year 2015, can be done through empowerment of women, training teachers to be gender sensitive, promoting the value of educating girls, making the schools safe, postponement of early marriage and childbearing, allowing pregnant teenagers to continue studying and return to school after delivery, offering scholarships and providing universal access to reproductive health. (master plan for development, http://www.unfpa.org/public/home/sitemap/icpd/MDGs/MDGs-ICPD)

According to United Nations reports, it is clearly indicated that number of children out of school in 2007 was 28% low than in 2000 (MDG Summit 2010). According to these statistics, it is obvious that achieving primary education can impact positively empowering people. Further, some of the world poorest countries have significantly increased enrolments in education and narrowed the gender gap related to educational opportunities while extending the opportunities for disadvantaged groups (MDG Summit, 2010).

This kind of assessment on MDG’s related to education clearly shows, how member countries are committed to achieve millennium development goals.

Main objective of this study is to explore the potential of education to empower people as human development is considered as one of central pillars of development. Concurrently, this study aims to examine the applicability of the Millennium Development Goals to such scenario focusing on its most apposite segments. Mainly this research would be an archival research which would base on secondary sources. Additionally, the study would focus on the United Nations reports and statistics.

II. EMPOWERMENT THROUGH EDUCATION

What is Empowerment? According to the Oxford Dictionary it means that to make (someone) stronger and more confident, especially in controlling their life and claiming their rights. Generally, the term empowerment refers to a multi-dimensional social process that enhance diverse of human capabilities. It is also relevant in all aspects that gain confidence of human beings to be competent enough so that it would be a crucial aspect for the development process. As defined by the World Bank “ Empowerment is the process of enhancing the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes”. (http://web.worldbank.org/WEBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTEMPowerment/0,,contentMDK:20272299~pagePK:210058~piPK:210062~theSitePK:486411,00.html).

According to this definition, empowering of people refers to a process that transform people’s choices into appropriate proceeding and endings that comply with the social needs and development. Further, it can be elaborated as an expansion of assets and capabilities of poor people to participate in negotiate with, influence, control, and hold accountable institutions that affect their lives (The World Bank’s 2002). Therefore, it is important to understand that people’s empowering increase assets and capabilities of individuals in order to make their purposive choices in to a reality.
Empowering persons can be varied from the individual level to the community level and also it can further go internationally. Therefore the key tool for empowerment is through education and that is the central pillar of development. And it can also be said that Education is an indispensable factor regarding empowering people. It is revealed that human empowerment is a multi-commitment task which is directly applicable to development process. And therefore it becomes one of the key component goals in the perspective of the Millennium Development Goals.

Developing regions have made impressive strides in expanding access to primary education, with the adjusted net enrolment rate growing from 83% in 2000 to 90% in 2011. Over the same period, the number of children out of school worldwide declined by almost half from 102 million to 57 million. But the progress of this in the beginning has considerably slowed down. Between 2008 and 2011, the number of out-of-school children of primary school age fell by only 3 million. That means that, at the current rate, the world is unlikely to meet the target of universal primary education by 2015. (The Millennium Development goal report, 2013)

Household poverty is the single most important factor keeping children out of school. This was analysed by a survey in 63 developing countries between 2005 and 2011. Children and adolescents from the poorest are at least three times as likely to be out of school as their richest counterparts. Rural children are nearly twice as likely to be out of school as urban children. Across these countries girls are more likely to be out of school than boys among both primary and lower secondary age groups. The gender gap in school attendance widens in lower secondary education, even for girls living in better off households. (The Millennium Development goal report, 2013)

The education can play a crucial role regarding the Poverty eradication through empowerment based on knowledge/education. In the field of education, lifelong learning is crucial in order to eradicate poverty: in some cases, families that live just over the poverty line (and apparently are not poor) turn suddenly into poverty for the crisis effects (loss of jobs). (http://www.un.org/esa/socdev/publications/FullSurveyEmpowerment.pdf.) According to this, it is imperative to mention that, education provides a broader range of opportunities to empower people. For this reason, lifelong learning can be considered as one of effective tool to enable the “new poor” to find other solutions in order to avoid poverty and to “empower themselves”. (http://www.un.org/esa/socdev/publications/FullSurveyEmpowerment.pdf.)

In this scenario, it is apparent that proper educational system provides the basis to economic opportunities; similarly this instance portrays people can have the chance to achieve a better life through a better education system, that could transfer their knowledge into possible ways through which they can gain what they need. Indeed, proper education would allow them to get access to many opportunities. This multiple opportunities would reduce the risk of being unemployed or being vulnerable in terms of economic needs. It is very important to mention, in the event of such loosing economic opportunities, proper education may provide numerous choices to overcome the issue. In the same manner, this would support individuals to make effective discisions as their empowered with an appropriate educational system.

Therefore, the contribution of education is crucial to create new opportunities to empower people. For instance, poverty is one of major obstacles to empower people and it decreases the choices and opportunities for people. Further, poverty can be a cause of some other social issues that would negatively impact on people empowering. Therefore, education can provide new alternatives, skills and capabilities that combat with poverty. “Education helps, provide people with choices and gives them the ability to improve themselves and their surrounding society.” (http://www.un.org/esa/socdev/publications/FullSurveyEmpowerment.pdf.) Hence, the considerable allocation given by the MDGs for education can be justified as education is a core pillar of empowering people. Further, other aspects of people's empowering also will depend on the success of the education system.

The following table further illustrates how education can arbitrate the circumstances that directly negatively impact on the people empowering.
### Table: 1

<table>
<thead>
<tr>
<th>IDENTIFIED CAUSE (perception)</th>
<th>INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circumstances beyond the control of the people (natural disaster and bad luck)</td>
<td>To relieve immediate suffering through relief and charity</td>
</tr>
<tr>
<td>Lack of education and motivation of people; low level of resources</td>
<td>To raise production through provision of vocational education and income-generating activities, savings and credit</td>
</tr>
<tr>
<td>Poor functioning or lack of delivery of health, education and agricultural services.</td>
<td>To make existing programs work better and provide alternative services such as health care, legal advice and establishment of citizen’s committees for strengthening the delivery of services</td>
</tr>
<tr>
<td>Exploitation and inequality</td>
<td>To overcome exploitation and inequalities by mobilization (political parties, movements and awareness-raising programs)</td>
</tr>
<tr>
<td>Structural problems (unjust structures)</td>
<td>Building new economic, political, legal and educational structures through mobilization and concretization programs as well as new forms of education</td>
</tr>
</tbody>
</table>

Source: http://www1.umn.edu/humanrts/edumat/IHRIP/circle/modules/module20.htm#_edn9

According to the table, it is apparent that education can involve overcoming issue areas that directly linked to empowering people. Specially even in the circumstances that beyond individuals controls, proper education system can provides means to mitigate and minimize the coast of such event. Even it is an unprecedented event; multiple alternatives provided by the proper education can manage the damage of such circumstances.

Further, the education can eliminate some prominent obstacles by transforming existing unjust socio economic structures into more acceptable and fair structures. In the same manner education can contribute to the well being of some other aspects such as: health, infrastructure and agriculture that are crucial in human empowering.

Before adopting the MDGS, “120 million primary-school-age children were not in schooling in 1999, 53 per cent of them girls and 47 per cent of them boys. This is a narrower gender gap than in 1990” (UNICEF, 2001). According to this, it is very clear that before the adoption of MDGs, there wasn’t satisfactory access towards primary education. Further reports reveal that, Sub Saharan Africa and South Asia reported the highest numbers of children who are not in engaged in primary education in by 1990.

### III. CONCLUSION

This paper has identified three major functions of education in relations to empowering the people.

- **Transformative function:** the proper system of education can transform troublesome existing socio economic and political structures into more acceptable and appropriate structure that can facilitate human empowering.

- **Preventive function:** Any effective education system can prevent people become powerless in terms of social, economic and political by providing a necessary guidance.

- **Constructive function:** The appropriate education can provide many creative alternatives in order to replace prevailing obsolete or weak structures. Further it can cerate many choices and opportunities.

Further it can be concluded that education plays a key role in empowering people providing numerous opportunities and choices for the people. Similarly it creates alternatives and necessary adaptations to vulnerable situations which can jeopardize the human empowering. In addition, education is directly linked with some other aspects that impact on the human empowering. Therefore, it is essential to improve the educational systems that can creatively involve in the development process leading to effective human empowering. The achievements of MDGs in order to empower people
through education are satisfactory with some exceptions. Still there are some regions such as Sub-Saharan Africa and South Asia to improve the situation complying with the second MDG: achieving universal primary education.

Moreover, this paper reveals frequent emergence of a large number of non-traditional security threats in the world such as: natural disasters, trans-boundary terrorism, political instabilities, use of advanced and sophisticated weaponries and other prominent non-military issues have a great negative impact on achieving universal primary education. In the same manner it has impact on eliminating the gender gap in primary and secondary education. Indeed, this phenomenon has congested some of the genuine commitments of achieving universal primary education.

Therefore, this study suggests the genuine needs of countries are essential to make MDGs a reality. Concurrently states should incorporate effective mechanisms to enhance the access to education, specially focusing on the primary education. Further, some other aspects which can have a great negative influence on the education and the people empowering should be addressed via guanine commitments of states. Mainly non-military threats that would jeopardize the educational development and human empowering should be addressed through effective means. Concurrent to that, a proper assessment regarding the progress of achieving primary education is needed to bridge the existing lacuna in educational progress of some regions.

This research finally intends to focus on the recommendations in order to empower the people through education by referring the millennium development goals.

- International Mechanism that can monitor the MDG, no :P 2 which focus on primary education should be establish in order to make necessary recommendation and guide lines.
- All states should comply with the MDG, No: 2 in cooperating achieving primary education agenda in to their national policy making procedures.
- All states should be committed towards international mechanism that empowers people through education having necessary adaptation.
- The other external issues that can obstruct empowering people should be addressed in very effective manner.
- Necessary cooperation between state and non-state actors should be initiated to empower people.
- States should emphasize the significance of education to empowering individuals.
- This perception should be promoted among the communities to have genuine commitments towards empowering people.
- Empowering people cannot be achieved only through the millennium development goals since it require the support from other aspects as well. Therefore converged approach is needed to empower human beings in effective manner.

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The Role of Education as a Source of Human Capital on Rural Poverty: A Review of Literature

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Abstract - Rural area is a geographic area located outside cities and towns. In order to have long term sustainability in rural sector, education as a source of human capital formation plays a major role by empowering the rural people to a right direction in a productive manner for right decision making ability. Hence the education would be a sustainable strategy to uplift the rural sector with agricultural development. Although for last few decades, many subsidiary programs were introduced in order to alleviate rural poverty, still rural sector has poverty. However, there is a structural change in the rural sector due to either subsidies or free education system. Hence, the objective of this review is to explore how educations as a source of human capital would impact on to expand the living standards of the rural sector as identified by literature. For over past two-three decades, large number of studies has been documented in relation to this theme. In the present study substantial amount of published articles were referred in order to grasp the real gravity of the agricultural development in the light of education as a desk research.

The objectives guiding the analysis of literature are to; understand the relationship between education and human capital development; human capital and human development; human capital and rural agricultural productivity; and human capital as a source of human capital to alleviate rural poverty. This review is instigated by searching key academic databases using relevant search questions. The literature suggests that there is an inverse relationship between human capital and rural poverty.

Keywords: human development, labour productivity, agricultural productivity, education, poverty

I. CONCEPT OF EDUCATION

Education is an ongoing process which occurs over a period of time to improve the living conditions of people. In this effort, like other people in the society even the improvement of the farmer’s; knowledge, skills, attitudes in agricultural technology, farming activities and methods of agricultural marketing (Rohana et al 2006) etc. are also pioneered by education as the real corner stone’s of rural economy. Therefore education plays a major role in improving such knowledge, skills and attitudes of rural farmers in order to empower them as a human capital or as a productive resource. That’s why even human capital theory also try to relate education as an investment as a source of non-farm opportunities to improve the ability of investment decisions (Weber et al., 2007) and to develop entrepreneurial skills and other non-agricultural abilities to determine the ability of spotting opportunities and capitalizing education with them (Silva and Kodithuwakku, 2005); (Ucbasaran et al. 2000) as a continual effort.

As per the literature, education sharpens the people with skills, knowledge and abilities. These skills, knowledge and abilities have the possibility to make creativity and innovativeness aroused. As the way education creates or enhances one’s ability, know-how (Gibbs, 2003), human growth (Barro and lee, 1993), human development (Bhushan and Arya, 2008), skills enhancement (both cognitive and non-cognitive) and productivity.

Gibbs (2003) articulates that pursuing a good education goes hand in hand with knowing how. With such know-how, people can improve their strategic thinking to do these things efficiently and effectively to improve their socio-economic growth rate. In support of this, even Barro and lee (1993) in a study of 129 countries concludes that
education level has a strong explanatory capacity in so far as they highlight the direct positive effects education on growth rates (Bhushan and Arya 2008). As Bhushan and Arya (2008) point out that education improves one’s explanatory capacity, cognitive skills/qualities that can help to improve one’s creativity and innovativeness. Such creativity and innovativeness are the main ingredients of human capital development of which would be instrumental and materially important in the working place and business. However, as Oxaal (1997) affirms based on human capital theory that education was valued by employers not because of its cognitive skills nature, but because of its non-cognitive qualities and attributes. And further Oxaal (1997) points out that the non-cognitive traits can be encouraged by the education to effect on the attributes required by employees at unskilled, middle and higher levels of the employment because non-cognitive skills can enhance the creativity of a person at any time. Therefore, Oxaal (1997) concerns that the non-cognitive skills are mostly accepted by the employers as it are the basement of creativity and human productivity.

Due to the problem of lack of educational resources in many rural communities, it places the responsibility of building the human capital necessary to fulfill local employment needs into rural schools (Flora, Flora, & Fey, 2008); (Ann and Coleman 2010). But failures within it influence the human development task in the rural sector to desperate. Due to their inability to cater education to rural sector adequately, most certainly they lose the chance of obtaining both cognitive skills and non-cognitive skills of which are reckoned as major pillars in human capital development as indicated by Bhushan and Arya (2008). However such prevailing poor facilities in the rural sector and the schools (Oxaal, 1997), causes people to be more desperate in thinking creatively and acting innovatively. Therefore, creativity and human development which are backed by the education has become a necessity in order to develop the rural sector socially and economically viable in such a way that has been done in the urban and suburban sector. Although better education enhances the peoples’ creativity, Oxaal (1997) believes that some profiles reaches to peak and then decline beyond a certain age suggests that the skills created by education are prone to be obsolescence and that their productive value declines when technology has outpaced them. This is further up to a contradiction. Because, age is not an obstacle to develop human as technology is a result of education and; and even such technology is also a result of a creativity derived from a better education, hence age is not an obstacle to coincide with technology. That’s why education is needed as a continuous process to cater the changing world requirement.

II. EDUCATION: THEORIES OF LEARNING

As per the Text Book of “Introduction to Human Resource Training and Development” published by Open University of Sri Lanka, it indicates that education or learning can pass four categories as Reinforcement Theory, Cybernetic and Information Theory (Communication), Cognitive Theory and Experimental Learning Theory. These theories are more toward informal education rather than formal education. In case of human capital formation, more than the formal education, the involvement of informal education is higher as per Weir (1999).

A Reinforcement Theory
The term reinforcement can be explained in its positive sense. “It means commending learners when they have accomplished a task successfully, thus motivating them to continue with their learning. Positive feedback and knowledge of results are important to ensure that effective learning takes place.”

B Cybernetic and Information Theory (Communication)
If a task can be divided in to a number of small parts, learning can be easy. As an example if a workshop can be conducted in several sessions to enable the employees to obtain better results, the communication could be easy and effective.

C Cognitive Theory
This theory indicates that the way how people learn to recognize and define problems and experiment to arrive at solutions. This theory indicates that people can identify and explore the things by themselves and hence the possibilities that they can retain such skills or knowledge is longer and it is possible to use it whenever required.

D Experimental Learning Theory
People would like to experiments and learn the things but there are four different aspects of
learning as activities, reflectors, theorists and pragmatists

The Actual Experience (Converge)
Some people want to try and do something new, although they fail it. Still they get knowledge as a way of learning. However these people are called to activities. Activities enjoy new experiences and opportunities from which they can learn.

Observations and Reflections on that Experience (Assimilates)
Some people want to gather data, observe them, think and assimilate before they do something. They are called reflectors. They would like to explore what happened, where the things went wrong, and they review the results and learning.

Conclusions from Experience
They prefer to make their judgment of which they learn. They are called theorists. Theorists like to explore methodically. They look through the problems in a step logical way and ask questions. They tend to be analytical.

Planning the Next Steps
These people need to put whatever they learn in to practice, to act quickly and confidently and to see the result. They are called pragmatists. They don’t want theories but the results. They like to experiment and search for new ideas which they can tryout. To learn like this, people need better education. Even the rural farmers who are successful sometimes must have become activities, reflectors, theorists and pragmatists in their life times for many times. This is type of informal educational aspects. This brings new insights in to the production section, agricultural sector and their non-farm opportunities. Therefore, the Knowledge, Skills and Abilities derived by them from three folds of education, makes matters in stabilizing the agricultural productivity being the core concern of the study.

E Education as a Strategy against Poverty
“Education means acquiring knowledge and skills. Weir (1999) in the study of ‘The Effects of Education on Farmer Productivity in Rural Ethiopia’ identifies that education is in three folds; ie Formal, Non-Formal and Informal. Formal schooling is usually the term education. Further as Chandrakumara (2009) indicates that human capital also is a result of formal, informal and non-formal education. Non-formal education includes agricultural extension, apprenticeships and training programmes. Informal education means wide range of experiences, including ‘learning by doing’ and migration or other activities which provide exposure to new ideas and facilitate learning. While formal education enhance people’s cognitive skills and abstract reasoning ability along with changes in attitudes, non-formal education foster specific information needed for a particular task or type of work. But informal education direct people to form attitudes, beliefs and habits. Formal education, usually known as schooling, is the process of transferring knowledge and skills from one generation to the next” (Janjua et al 2011:156).

As a tool of non-formal education, in case of agricultural extension, Rohana and Bandara (2006) indicates that the impact of role of agricultural extension is basically focus on farmers’ income, through agricultural productivity. As they defined the agricultural extension is, “an ongoing, non-formal educational process which occurs over a period of time and it leads to improve the living conditions of farmers and their family members by increasing the profitability of their farming activities. In this activity, to achieve above goals, it expects the improvement of the farmer’s knowledge, skills and change of their attitudes in agricultural technology, farming activities and agricultural marketing” (pp.14). However, agricultural extension assist, guide and direct farmers to identify both farming and non-farming activities which can increase their net income (Rohana et al. 2006). For knowledge empowerment of the farmers or in order to form their human capital aspect, agricultural extension plays a huge role, specially, for the purpose of attaining higher agricultural productivity. Although the Agricultural extension serves as an educational empowerment tool, it serves as a social economic process as well for economic development and social development of the farmers.

As the benefits of education, Chandrakumara (2009) extends his concerns that schoolings brings only private benefits such as employability or productivity but also it extends its benefits to society as external benefits (Weir 1999). Further Weir (1999) and Janjua et al (2011) indicate there are two types of benefits of education; Internal Return (Private Return) and External Return (Social Return) as Chandrakumara refers. As per Weir
(1999) and Janjua et al (2011), the internal return refers to the benefits of investment in schooling which may flow to a person who has acquired the education in order to enhance his income-generation ability. External benefit means the benefit accrued to other members of that person's household or village for the purpose of diffusion of new farm inputs and productivity-enhancing techniques. However Chandrakumara (2009:02) refers that social benefit as 'externalities or spillover effect on the entire society'. However Janjua (2007) and Weir (1999) categorize decision making, employment, job satisfaction, income, health and well-being as private returns. And decision making, family environment, social network, peace and stability, labour force, economic growth as social benefit.

In addition to that Chandrakumara (2009) indicates that school has pecuniary and non-pecuniary benefits to the people those who are having better education or better human capital. In support of that even Zuluaga (2007) concludes that both of pecuniary and non-pecuniary benefits come due to education but not due to schooling as Chandrakumara (2009) indicates. Zuluaga (2007) articulates that pecuniary benefits such as income of individuals where non-pecuniary benefits are non-financial benefits of behavior or abilities or attitudinal changes of individuals flow to an individual's due as the returns to education.

Further Tabari & Reza (2012) indicate that education can impact; to increase labour productivity, to increase higher efficiency, to have high technology orientations and to go against the law of diminishing returns, to carry out the invention, exploration and innovation and then to increase the productivity, to have an optimal allocation scarce resources.

III EDUCATION AS A SOURCE OF HUMAN CAPITAL

As introduced by Schultz in his book of ‘Investment in Human Capital’ the term human capital was recognized as the stock of knowledge, skills and abilities that are derived from education. Schultz (1961) classified human capital as the accumulation of skills and knowledge that a people acquire during a span of time period. As Schultz (1961) identified the development of human capital can be categorized in to 5 areas; (1) investment in health and services (2) employment in on the job-training (3) empowerment in education level (4) extension programmes (5) migration due to changing job opportunities. As all these areas give the knowledge, experience and skills to human capital, obviously the education can make a human as a capital or as a resource or as an asset basically due to their better skills, talents, abilities, capacities by which it can achieve various initiatives such as employment opportunities / non-farm opportunities, farm opportunities and etc. On the other hand, all these five areas bring education to individuals from the tri-sources of formal, non-formal and in-formal. Therefore, human capital and education cannot be parted because human capital is a further extension of education. However, Tilak (2001) indicate that the knowledge which is imparted through education has the possibility to increases the productivity of the people and there by their earnings.

Flora et al (2005) on their study on, ‘Community capitals: poverty reduction and rural development in dry areas’ defined human capital as; ‘the native intelligence, skills, abilities, education, self-esteem and health of individuals within a community’. Tabari & Reza (2012) define that human capital as an accumulation of; science, knowledge, migration, experience, ability, health, regularity and discipline that is stored by education and health workforce in order to increase work efficiency in production. As both of the studies indicate, the concept of human capital is used to increase the productivity of the workforce and then to increase income levels. Further they consider that the costs of health and migration can also be considered as a part of investment in human capital, as health and migration can bring new insights in to a society. However Janjua and Kamal (2011) and Rosen (1989) point out that the stock of people with knowledge and skills is called as human capital, and Janjua and Kamal (2011) refer that the basic source for acquisition of human capital is formal education.

As per Wong (2012) in his article on ‘Effects of Education on Sub Saharan Africa’ he has used macro-mincer equation model as the empirical model with human capital stock (H) as has been shown below. The formula for the Human Capital as;

\[ H = e^{x(t)} \]
Where ‘S’ is the average years of schooling. As he states in support of Solow model that the increase in years of education has an impact on TFP (Total Factor Productivity) and output level of the country. Most importantly Wong (2012) indicates that the human capital is developed because of two reasons as schooling (learning-or-doing) and experience (learning-by-doing). Further Wong (2012) points out that the impact of time lag in the effect of human capital (the time gap between the period of investment for human capital and the result of such human capital). As he convince that primary education will be effective after ten to fifteen years later while tertiary education would be effective after six years later.

As Gazdar et al (1994), Malick (1991), Ahmed (1990) and Kazi (1995) indicate that education plays a critical role in human capital development. But the way how education influences on poverty especially to rural sector by means of human capital development is not extensively focused in this study. But alternatively, the linkage between education and human capital development through the productivity was suggested by Rohana (2006). But again, the way how productivity comes as a result of better education to relate with rural poverty is not clearly indicated. Still as per the brief of the literature review the human capital development which comes as a result of better education have a précises relationship and impact on both poverty and the development of a nation as a long term solution to eradicate the poverty.

However, Chandrakumara (2009), with the definition given by Schultz by incorporating stock of knowledge, skills, abilities in to productivity and employment, indicates that ‘human capital is a mean of achieving higher productivity and higher wages for individuals’. Further what Chandrakumara (2009) and Schultz indicates can be shown below in the Figure 1.1.

![Figure 1.1 Means and end of Human Capital](image)

Source: Author Created based on Chandrakumara (2009) and Schultz (1961)

As per Figure 1.1, Chandrakumara (2009) tries to explain that education and training along with health factor can make human capital concept. This is further consistent with what Schultz indicates. Further Chandrakumara (2009) points out that parents are forcing their children to go to school expecting future benefits to their children.

However Chandrakumara (2009) concerns human capital is somewhat relates with what Sen indicates. In brief Sen indicates that capability creates choices and as such choices can stimulate the freedom of people. Chandrakumara (2009:6) indicates those who are having human capital can ‘no longer be at the mercy of other, instead they can be in control of increasing their own productivity and earning through expanded capability’. What Chandrakumara (2009) articulated and how it was derived from the studies done by Zuluaga (2007) and Schultz (1961) can be illustrated as below in the Figure 1.2.
Figure 1.2 clearly indicates that human capital is fostered by Education, Training, Experience and etc being the three folds of education as Formal, Informal and Non-Formal education along with health to form KSA (Knowledge, Skills and Abilities) to enhance Productivity and Capability to bring pecuniary benefits and non-pecuniary benefits of education to individuals as explained above

IV EDUCATION, HUMAN CAPITAL AND CAPABILITY AND POVERTY

As Sen identifies in his book of ‘Development as Freedom’ he believes that poverty must be seen as the deprivation of basic capabilities rather than merely as the lawness of income which is the standard criterion of identification of poverty. He indicates poverty is not due to income deprivation or insufficiency to make basic needs but insufficiency can be reason for capability deprivation. Sen indicates that income is only instrumentally significant not instrumentally important like functioning or capabilities (Robeyns 2003).

Regarding educational involvement of poverty through capability approach, Sen indicates that ‘better basic education and health care improves the quality of life directly; they also increase a person’s ability to earn an income and be free of income-poverty as well. The more inclusive of the reach of basic education and healthcare, the more likely it is that even the potentially poor would have a better chance of overcoming poverty’ (p.90).

However as Sen indicates that education can be used as a tool to increase income in order to avoid, but Sen does not indicate that education is a type of tool in order to improves ones capability.

As Robeyns (2003) indicates that ‘capability’ is something like freedom to achieve something which ‘functioning’ mean achievement. But Sen has not clearly recognized the importance of education on capability enhancement or else the better functioning. As Chandrakumara (2009), Weir (1999) and Zuluaga (2007) indicates that education has ‘pecuniary’ and ‘non-pecuniary’ benefits. While ‘pecuniary’ benefit indicates revenues or income the ‘non-pecuniary’ benefits indicates other aspects such as attitudinal changes, behavioral changes, changes of thinking patterns and etc. both these benefits can be instrumental in influencing these ‘beings and doings’ or functioning.

However in order to achieve such capabilities as shown by the Robeyns (2003), there should be overall human changes which comes from the other non-pecuniary benefits which is flowing from the education.

However Sen’s main concern is to focus on inequality and poverty (Robeyns 2003) and as Robeyns (2003) claims that Sens’ approach is a normative framework but not a theory. Although the study done by Sen indicated about capabilities, he has not given the list of capabilities then as what are these capabilities that is peoples are potentials to functioning as life and physical health, mental wellbeing, bodily integrity and safety, social relations, political empowerment, education and knowledge, domestic work and non-market care, paid work and other projects, shelter and environment, mobility, leisure activities, time-autonomy, respect and religion. It is the capability list developed by Robeyns (2003). However education can influence indirectly on such life and physical health, mental well beings, bodily integrity and safety, social relations, political empowerment and, respect and religion through its non-pecuniary benefits such as peoples’ attitudes, perception, behavioral changes, knowledge. Further education
can even influence directly on domestic work and non-market care, paid work and other projects, shelter and environment, mobility, leisure activities, time-autonomy through its pecuniary benefits such as higher income or wage. Therefore, even Robeyns (2003) also has not recognized that these capability items can be further shaped up by education.

Further even Semasinghe (2009:185) also categories rural people’s capability list as food (avoid hunger and food insecurity), education (free from illiteracy and having knowledge), health (having a healthy life), clean drinking water (access adequately to clean drinking water), housing (sheltered safely and adequately) and sanitation (aces to improved sanitation). Although the study done by Semasinghe (2009) has not attempted to measure the capabilities directly, still the study tries to see its achieved functioning. Again education has the ability to influence on; to avoid hunger and food insecurity (through pecuniary benefits), to be free from illiteracy and having knowledge (through non-pecuniary benefits), to have a healthy life (through non-pecuniary benefits), to access adequately to clean drinking water (through pecuniary benefits), to get sheltered safely and adequately (through pecuniary benefits) and finally to get access to improved sanitation (through pecuniary benefits). These all can be achieved through its pecuniary and non-pecuniary benefits which are derived from education.

In case of Sri Lanka, it is country with free education and free health care; that mean education and health capability is there significantly. However even having free education system or full education capability in Sri Lanka, still there is a considerable ‘no-schooling’ rates, higher schooling drops out rate, higher GCE O/L failing rate, higher GCE A/L failing rate and etc. every sectors such as rural, urban and estate sector. Again even having health capability also in Sri Lanka, still it has health problems. The reasons could be lack of better knowledge, skills, abilities, attitude, perceptions and behavioral changes towards such of which can only be refreshed by the education as in major. Further Clark (2005) develops his conceptual foundation of capability approach as shown below in the figure 1.3

Figure 1.3 Developments of Capability Approach

As per Figure 1.3, even Clark (2005) also categories that commodity as ‘income’ or ‘commodity to command’ as has been articulated by Sen. However income is a function of productivity as most of literature such as Tabari & Reza (2012), Pudasaini (1983)Ekblom (1998), Kalirajan and Shand (1985), Weir (1999) and Pandey and Reddy (2012) reveal. Further as Fuglie (2009), Asadullah & Rahman (2009) point out productivity is a function of education. Therefore it can be concluded that income is a function of education. Then such income has an ability to influence on a persons’ capability in order to function properly to satisfy his utility requirement. However to function well in the society also do be done rightly or productively in order to achieve real poverty alleviation.

However in case of capability approach, education has a dual role; as Sen indicates lack of education capability itself poverty headed scenario. On the other hand, education can influence the other capabilities through non-pecuniary benefits and pecuniary benefits to function well in the society to enjoy the real freedom with real poverty alleviation. As Sen indicates that capability deprivation means inability to function in the society; that mean; inability to ‘being and doing’. Then the question arises why education can’t make this inability to ‘being and doing’ turn in to ability to ‘being and doing’. It can be done using the pecuniary and non-pecuniary benefits of the education as explained earlier. However based on the developments of capability approach, the following illustration can be shown as in the Figure 1.4.
As above Figure 1.4, indicates that the Knowledge, Skills and Abilities (KSA) generated form the three folds of education (Formal, Informal and Non-formal) can influence on capabilities (freedom to achieve something) through non-pecuniary benefits (changes of attitude, perception, behaviors, line of thinking) and pecuniary benefits (revenue or earning or wages) which comes through better productivity due to better education has an impact on its functioning (achievement). However, sustainable solution to poverty or long range solution to poverty or real poverty alleviation come only through productivity (do the right things and do the things rightly) as an extended development of education.

However, as Chandrakumara (2009) indicates education foster Human Capital and then Human Capital develop one’s productivity in a deeper sense. This indicates that education can make the person to be more efficient (to decide what is the right way to do a certain thing) and to be more effective (to decide what is the right thing to do). Therefore education has a direct impact on productivity and capability as literature supports. Further many studies points out that poverty income is influenced by the productivity in great. As the current study aims to see the income poverty approach as in major, the productivity is an important aspect of income poverty.

However the difference between Sen and Chandrakumara (2009) is that, Sen did not concern that education or human capital is the starting point of productivity or earning whereas Chandrakumara (2009) says it is; further Sen infer that earning is nothing with poverty, unless income does not assist in forming capability; but Chandrakumara (2009) believes earning as a part of poverty as a mean of poverty alleviation. Further what Chandrakumara (2009) indicate about ‘benefit of the income’ due to expanded capability or employability and productivity due to human capital is somewhat contrary to Sens’ concerns. However Chandrakumara (2009:6) firmly believes that ‘the creation of human capital through education among poor greatly helps to reduce or alleviate poverty’. Further, Chandrakumara (2009) is in a better view that poverty can be reduced through the empowerment of education as initial driver and productivity and employability as the mediating driver to effect on income.

V. SUMMARY

Education makes a person; a resource, a capital or an asset. Education can improves one’s thinking ability, creativity and innovativeness. It has the ability to make people to be more proactive rather than reactive. Education can make people; to think broadly rather than narrowly, to work as a team (social capita) but not as a group; to think about present and future simultaneously rather than past and the present; to pursue opportunities facing with threats rather than sacrificing opportunities for threats. In case of agricultural development of any country, education as a source of capital can change farmers’ pattern of thinking to; a proactive way rather than reactive way or developmental aspect rather than merely growth aspect. Hence education level of farmers extends its sphere up to input, process and output levels of farming in order to curtail poverty. In case of better selection of agricultural ‘inputs’ such as seeds, season, pesticides, crops, technology adoption, shifting methods and etc, the education plays a major role. Regarding strengthening the ‘process’ of farming, use of technology and etc and pertaining to ‘output’ of the farming, education of farmers would be materially supportive in order enhance their income and standard of living. Therefore the basic objective of this effort is to study the interrelationship
between education and agricultural productivity through human development.

Education as a source of human capital makes the people a resource, hence this resourceful people can make the things productive. Then the productivity emerges with plenty of advantages to agricultural sector and then the rural sector. Primarily, it gives a clear pathway to succeed agricultural sector through; cost advantages, higher income, higher wages, adequate volume of marketable surplus to higher income, enhancement of skills, ability meet the growing agricultural demand of people and so on. Hence agricultural development is a function of higher income, higher income is a function of productivity; productivity is a function of human capital development; human capital development is a function of education. Therefore Agricultural development is a function of education. The human resource reflected by educated farmers has been said to be a very important in determining the effects of agricultural growth on poverty reduction. Being the end result of education to a farmer, the agricultural productivity, it helps to enable farmers to develop rural sector through socially and economically through agricultural growth. Hence the starting point of agricultural growth is the development of education.

Agriculture and rural sector is inseparable; whereas education, productivity and development are also inseparable. Therefore when it turns to agricultural development, there is a correlation between agricultural productivity and education as a source of human capital. While education up to the secondary level of farmer has a significant impact on the improvement of agricultural productivity, the level of education works as source of agricultural transmission or innovation. This innovation along productivity forms the ‘input’ part of production process, in a meaningful and sustainable way in order to form a strong bond in the agricultural sector to boost their income sources than the poverty line. Therefore, the ‘input’ being a measure of total factor productivity (TFP) relating output in production gives a superior indicator of a sector’s efficiency. Innovation, productivity and efficiency are by-products of education of which should be used as a source to generate income aspects in the rural sector. Not only it boosts the income level due to innovation, but also can enjoy cost advantage too due to farmer’s choice of best combination of products.

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