

# IMPACT OF CORPORATE SOCIAL RESPONSIBILITY ON ORGANIZATION PERFORMANCE: SPECIAL REFERENCE TO THE COMMERCIAL BANK PLC

De Silva, H. T. M.<sup>1</sup> and Abeyssekara, N.<sup>2</sup>

<sup>1</sup>*Auston Institute of Management, Sri Lanka*

<sup>2</sup>*Open University of Sri Lanka, Nawala, Nugegoda, Sri Lanka*

## Abstract

*Nowadays CSR is the most significant factor for the organization and it is directly affected to the performance of the organizations. CSR realize the responsibility of organization for related parties and this study aims to identify the impact of the CSR on organization performance with special reference to the Commercial Bank PLC. Additionally, this study is providing the theoretical base on CSR and organization performance and thereby analyse the relationship between CSR and organization performance. To achieve objectives of the study, quantitative approach has used with 92 respondents and the results are indicated that there is a significant correlation between CSR and organization performance and also CSR positively impact on the organization performance.*

**Keywords:** CSR, Organization Performance

## 1. INTRODUCTION

Today CSR is the most important factor for organizations. It is directly affected on organization performance and there is a powerful combination between CSR and organization performance. CSR realizes the responsibility of the organization to related parties and it can be used as a strategy to improve the performance and the value of the organization. Commercial Bank PLC is one of the most recognized commercial bank in Sri Lanka and it has utilized millions of funds for CSR. However problem is that they have no proper observation about outputs of their CSR practice and the top management does not know the most probable factor that improves organization performance through CSR. Major objective of this study is to identify the relationship between CSR and organization performance and also answer for problems of Commercial Bank PLC. Through this study Commercial Bank PLC can diagnosis current situation of their CSR practice and its relationship with organization performance.

## 2. LITRETURE REVIER

### 2.1 What is CSR?

CSR can be considered as a most important concept for organization that affects into day to day operations of organization from different ways. CSR is the degree of moral obligation that may be ascribed to corporations beyond simple obedience to the laws of the state (Kilcullen and Kooistra, 1999, cited in Dahlsrud, 2008). The key objective of the organization is to maximize the profit and in this case it is avoided. Jackson and Hawker (2001) concluded that CSR is how you treat your employees and all your stakeholders and the environment (cited in Dahlsrud, 2008). It eliminates negatives and creates positives for the organization.

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i.e. Gifts ( $\beta.220$ ,  $t3.409$ ,  $p<0.05$ ), Interactions between the company Representatives ( $\beta.193$ ,  $t2.593$ ,  $p<0.05$ ) and Sponsorships ( $\beta.663$ ,  $t10.304$ ,  $p<0.01$ ) were statistically significant with the Professionals' prescribing behavior at 0.05 significant levels. As for the results, the promotional methodologies used as gifts, company representatives' interactions and the sponsorships were positively influencing the doctors' branded medicine prescribing behavior. Sponsorships ( $\beta.663$ ,  $t10.304$ ,  $p<0.01$ ) had the highest impact towards Doctors' Prescribing behavior compared to that of Gifts ( $\beta.220$ ,  $t3.409$ ,  $p<0.05$ ) and company representatives' interactions ( $\beta.193$ ,  $t2.593$ ,  $p<0.05$ ).

## **6. CONCLUSION AND RECOMMENDATIONS**

Researchers motivated to do this research because the pharmaceutical sector has conducted very little research on this area, and pharmaceutical industry facing a problem of sponsoring due to raising competition. It is clear from this research that gifts, free samples, the relationship between the doctor and the company representative, corporate image and specially the sponsorships are leading doctors to prescribe branded medicine to patients. Sponsorships, gifts and company representatives' interactions are the dominating influential factors when it comes to prescribing behavior.

### **6.1 Recommendations**

Although there are many criticisms on the pharmaceutical company strategies on promoting medicine, it is evident that these are being continuously carried out and the doctors are influenced by the same. It is highly recommended to implement discussion groups on the ethical interaction between healthcare professionals and pharmaceutical companies in the betterment of patients. Also the pharmaceutical companies and representatives should take measures to provide the correct information to the professionals and also healthcare professionals should investigate the patients' background and their ability of affording the branded medicine before prescribing branded medicine.

### **6.2 Suggestions for Future Researchers**

It is suggested for the future researchers to include more sample to gather data and the data collection to be done in different fields such as maternal nutritional supplements, surgical devices, children's medicine, etc. Also if the chemists can be included in the research, it will demonstrate a separate view since chemist plays a large role in the pharmaceutical market in forwarding medicine patients. Also the same research can be done with demographics of the professionals taken into consideration which will lead to better results.

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**d) Relationship with Company Representative and Branded Medicine Prescribing Behavior of Professionals**

**H4:** There is a positive relationship between pharmaceutical representatives’ interaction and doctors’ branded medicine prescribing behavior.

The above analysis shows a moderate positive correlation between medical representatives’ personal rapport and doctors’ branded medicine prescription decision with a moderate positive correlation coefficient of .380. Due to this H4 hypothesis is accepted.

**e) Corporate Image and Branded Medicine Prescribing Behavior of Professionals**

**H5:** There is a positive relationship between corporate image and doctors’ branded medicine prescribing behavior.

The analysis revealed a low positive correlation between corporate image and doctors’ branded medicine prescription decision with a positive correlation coefficient of .147. Due to this H5 hypothesis is accepted.

**5.4 Multiple Regression Analysis**

Multiple regression analysis was used in this study to analyze the relationships when all intermediate independent variables such as gifts, sponsorships, free samples, interactions with company representatives and brand image simultaneously influence the dependent variable, professionals’ branded medicine prescription behavior.

**Table: 5.3 – Multiple Regression Analysis**

Promotional tools used by pharmaceutical firms	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta β		
(Constant)	.632	.238		2.654	.009
Gifts	.184	.054	.220	3.409	.001
Sponsorships	.480	.047	.633	10.304	.000
Free Samples	.003	.052	.004	.049	.961
Interaction with Company Rep.	.126	.048	.193	2.593	.011
Corporate Image	.030	.043	.060	.707	.481
<b>R<sup>2</sup>=0.611; Adjusted R<sup>2</sup>=0.595; F Value = 37.963**; Sig =0.000</b>					

The multiple regression analysis was performed to examine the impact of brand promotional methodologies on doctors’ prescribing behavior of branded medicine. According to Table 5.3, the R-square value shows that the average of 61.1% of the variation can be explained by the variation in all the five independent variables which included the promotional methodologies used by pharmaceutical firms. Results also indicated that three dimensions,

independent and dependent variables. The bivariate correlation procedure was subject to a two tailed of statistical significance at a highly significant ( $p < 0.05$ ) level.

**Table 5.2: Pearson Correlation Analysis for Main Variables**

		Gifts	Sponsorships	Free Samples	Representative Interactions	Corporate Image
Professional's Prescribing Behavior	Pearson Correlation	.437	.682	.237	.380	.147
	Sig. (2-tailed)	.000	.000	.000	.000	.002
	N	60	60	60	60	60

Based on Table 5.2 all five dimensions taken as brand promotional methods were positively correlated to doctors' branded medicine prescribing behavior with the significant values that were less than 0.05. Sponsorships has the highest correlation coefficient (0.682), followed by gifts (0.437) and company representatives' interactions (0.380). Free samples (0.237) and corporate image (0.147) showed the weakest relationship with the dependent variables. According to the study the methodologies used by companies to promote their drugs are demonstrating a moderate correlation and substantial relationships with doctors' branded medicine prescription behavior.

### 5.3 Hypothesis Testing

#### a) Gifts and Branded Medicine Prescribing Behavior of Professionals

**H1:** There is a positive relationship between gifts and doctors' branded medicine prescribing behavior.

The correlation coefficient of .437 demonstrates that there is a positive moderate relationship between gifts and doctors' branded medicine prescribing behavior. Due to the positive correlation between the two variables H1 hypothesis is accepted.

#### b) Sponsorships and Branded Medicine Prescribing Behavior of Professionals

**H2:** There is a positive relationship between sponsorships and doctors' branded medicine prescribing behavior.

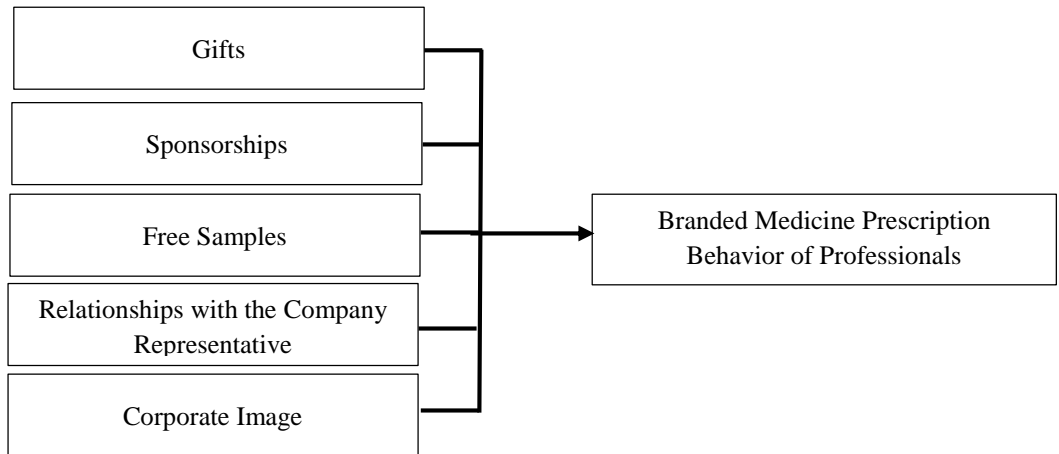
The correlation analysis clearly shows that there is a moderate positive relationship between sponsorships and doctors' branded medicine prescribing behavior with a correlation coefficient of .682 at a 95% confidence level. Due to the positive correlation between the two variables H2 hypothesis is accepted.

#### c) Free sample and Branded Medicine Prescribing Behavior of Professionals

**H3:** There is a positive relationship between free samples and doctors' branded medicine prescribing behavior.

The correlation coefficient of .237 demonstrates that there is a positive low correlation between free samples and doctors' branded medicine prescribing behavior at a 95% confidence level. Due to the positive correlation between the two variables H3 hypothesis is accepted.

**Figure 1: Conceptual Framework of the study**



## 5. FINDINGS

### 5.1 Reliability Test

Results of reliability test for main marketing methodologies used by organization to promote the pharmaceutical products to the doctors and doctors’ prescription behavior towards branded medicine were shown in Table 5.1.

**Table 5.1: Reliability Test Results**

Variables	Dimension	No. of Items	Cronbach’s Alpha for Dimension
Promotional Tools used by Organizations	Gifts	5	0.806
	Sponsorships	5	0.901
	Free samples	3	0.811
	Representatives’ interactions	5	0.768
		2	0.821
	Corporate image		
Professionals’ prescription behavior		2	0.802

Reliability results indicated that the data that was gathered from the questionnaires were reliable. According to the table 5.1, the Cronbach’s Alpha values of all the measured variables are greater than 0.7 and most of them are in the range of 0.8 which is consistent with Sekaran’s (2009) suggestion, alpha over 0.7 are reliable and acceptable.

### 5.2 Correlation Analysis

A correlation analysis was carried out for the five independent variables identified through literature to determine their impact on doctors’ branded medicine prescribing behavior. Below mentioned correlations were obtained to ensure the dependencies between the

According to Lakdawala (2006), doctor-targeted promotion takes a variety of forms:

- Gifts, such as free samples, small stationery, travel to conferences and educational events, and, some executive even said, cash.
- Continuing medical education (CME), Sponsorship of conferences and educational events.
- The use of key opinion leaders – i.e. senior clinicians and medical educators as speakers at learned conferences.
- Funding of medical journals through advertising.

Separate studies by De Ferrari, et al 2014, Zaki, 2014, Wazana (2000) Banks and Mainour (1992), McInney, Scheidermeyer, Lurie et al (1990), all found that there is a strong correlation between doctors' tendencies to recommend drugs and their receipt of gifts/sponsorship/ non-related payment etc. According to Narendran & Narendranathan (2013) good rapport with the doctor, launch meetings reputation of the company, quality of the drug and brand names significantly influenced prescription behaviour, while direct mailers, advertisements in journals and giving letter pads and other brand reminders were less effective.

#### **4. RESEARCH METHODOLOGY**

A self-administered questionnaire was developed with 20 Likert scale questions with the continuum of strongly agreed (5 Marks), strongly disagreed (1 Marks). As the dependent variable doctors' prescription behavior of branded medicine was taken into consideration. As independent variables, five main promotional tools used by pharmaceutical firms were taken into consideration, i.e. gifts, sponsorships, free samples, interactions with company representatives and brand image. Under Gifts, doctors' name printed prescriptions pads, medical equipment, branded gifts were taken into consideration as sub indicators. Personal sponsorships, clinical meetings, sponsoring for educational purposes and sponsoring for private clinics were considered under Sponsorships while reduced pack samples and trade pack samples were taken as sub variables under Free Samples. Personal rapport built with the representative and doctor, product knowledge and interactive skills of the representative were considered as sub variables under the Pharmaceutical Representative Interactions for the study and corporate popularity and its Corporate Social Responsibility considerations were highlighted as sub variables for Corporate Image. The questionnaire was developed based on the conceptual framework illustrated in Figure 4.1. This was distributed among 80 professionals in Western Province in Sri Lanka and the respondents were given the opportunity to rank each question through the given scale. Convenience sampling methodology was adapted in distributing the questionnaires and visits were performed at hospitals both public and private, health centers and individual medical dispensaries. From the total, 66 questionnaires were returned from the respondents and from these, 06 questionnaires were rejected due to incomplete data.

approximately 28%, private hospitals account for approximately 10% and dispensing family physicians account for approximately 2% of the total pharmaceutical business (Kariyawasam, 2013).

With a highly competitive background, each and every pharmaceutical company spends millions of money for promotions of their brands. However due to prevailing rules and regulations and also due to the complexity involved with most of the medicine, advertisements targeted to general consumers are unsuccessful as a promotional mechanism. One of the common practice used by pharmaceutical marketers to promote their brands is the direct marketing methodology where the representatives from the firm meeting professionals in the industry, i.e. doctors and pharmacists with the objective of educating and promoting the drugs or medical equipment. Although there are a large number of criticisms on the doctors' ethical behavior in these promotional interactions; this practice continuously used by pharmaceutical industry players to promote their brands.

## **2. OBJECTIVES OF THE STUDY**

Pharmaceutical industry is a unique industry where promotions cannot be done as the Fast Moving Consumer Goods sector. The restrictions of promotions encourage the marketers and manufacturers of pharmaceutical products to find alternative promotional mechanisms to reach the target market. The activities which are aimed for professionals within the field are common among the pharmaceutical companies. There is ever increasing competition among the marketers to promote individual brands by executing various promotional related activities towards the professionals to push the brand to the patients. It is significant to explore the effectiveness of these promotional mechanisms when it comes to doctors' branded medicinal prescribing behavior. So this research is aiming to investigate the degree of impact from each promotional factor carried out by pharmaceutical companies on professionals' endorsement on branded medicine in pharmaceutical industry. In depth, the study is addressing the relationship between sponsorships, gifts, free samples, relationship practices and corporate brand image which had been identified from the international literature as common marketing methodologies used by the industry on professionals' branded medicine endorsement behavior within the Sri Lankan context.

## **3. LITERATURE REVIEW**

Pharmaceutical products are available as generic and brands. There are also a large number of "me too" brands available as low price options for patients. Within this market, the doctor can be the key in getting a brand promoted and sold through prescriptions and also the doctor can become a gate keeper due to swapping from one brand to the other due to various reasons. The pharmaceutical companies are trying to keep their brand in top in the doctor's mind through various mechanisms.

Literature indicate that the physicians (residents and faculty alike) meet with pharmaceutical representatives up to four times a month and as a result of these interactions, residents are often provided with drug-sponsored meals and samples, whereas faculty are given more honoraria, conference travel, and research funding (Wazana, 2000). According to (Norris, Herxheimer, Lexchin, & Mansfield, 2005) pharmaceutical manufacturers spend vast sums of money on promotion, including sales representatives, samples, advertisements in broadcast and print media, and sponsorship of educational events and conferences.



# FACTORS AFFECTING ON PHARMACEUTICAL PRODUCTS BRAND PROMOTIONS: A STUDY ON PROFESSIONAL ENDORSEMENT PERSPECTIVE

Sriwignarajaa, K. and Fernando, P.M.P.

*Department of Marketing Management, Faculty of Commerce and Management Studies,  
University of Kelaniya, Sri Lanka*

## Abstract

*Sri Lankan pharmaceutical industry is a one of the largest profit making industries in the country with a turnover around 50-60 billion rupees. Indian drug companies dominates the industry and lesser than 25% of multinational companies with a few local manufactures are sharing the profits from the industry. Due to the competitiveness of marketing the branded medicine, each player is following various methods to grab a higher market share and profitability. In pharmaceutical market with a litter of merchandise, it is not possible for a doctor or physician to remember all brands. Companies are using a direct marketing approach with medical representatives and sales representatives approaching doctors for promotional purposes where they detail the drug and request the doctors to prescribe their brands. Awarding sponsorships to a doctor and getting a commitment for the prescription of the particular brand had become a trend for all Sri Lankan as well as global drug manufacturing companies. This research deals with different aspects of drug company promotions and branded medicine prescribing patterns of doctors. Researchers selected 60 practicing medical professionals as the sample from the Western Province of Sri Lanka and distributed a self-administrated questionnaire in order to investigate the professionals' opinions on the brand promotional techniques carried out by the pharmaceutical manufacturers and distributors and the impact of these brand promotional mechanisms on professionals' brand endorsement behavior. Through a literature analysis, five main methodologies used by organizations to promote the pharmaceutical brands were identified, i.e. gifts, sponsorships, free samples, representatives' interactions and corporate image. The analyzed data revealed that the most influential factor leading towards doctors' branded medicine prescription behavior was sponsorships offered by the pharmaceutical firms. At the same time gifts and the interaction between the doctor and the company representatives also mainly encourage doctors to prescribe medicine.*

**Keywords:** Prescriptions, Medical representatives, medical sponsorships, professional endorsements

## 1. INTRODUCTION

Sri Lankan Pharmaceutical sector has been identified as a fast growing industry with a +10.0% growth in local currency terms and 7.4% in US dollar terms, with a total government expenditure of LKR 75.09 billion in 2014 (Sri Lanka Pharmaceuticals and Healthcare Report, 2015). Sri Lanka's improvements in healthcare have created stronger commercial opportunities for drug makers and marketers in the country. The total pharmaceutical market of Sri Lanka is approximately US\$ 365 million of which the private retail market accounts for approximately 60% of sales while the government hospital purchases account for

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		Willingness to purchase	Price
Willingness to purchase	Pearson correlation	1	.543**
	Sig. (1-tailed)		.000
	N	.292	292

Correlation is significant at the 0.01 level. In this case, it seems that the correlation value is .543. It is a positive value. Thus, the corresponding hypothesis can be accepted can be accepted.

## 8. CONCLUSION

As per the test results, It was proven that there is a relationship between the price factors and buying behavior for selection of decorative paints. But compared to brand image and product quality the influence made by the prices is somewhat low. It is understood that consumers concern the quality of the paints. Though it is so, salient noticeable thing is that other than quality, a greater place is given to brand image that there is a positive relationship between the brand image and the buying behavior. More specifically say, as per the results the house owners mostly concern the brand image other than price and quality factors.

Accordingly it can be concluded that whatever the price mainly consumers consider brand image and quality of the paints. Thus, paints companies should concentrate on improving first mainly the brand image and thereafter quality of the paints.

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This table shows that the mean value is 3.73 and it exists between 3.68 and 5.00. It indicates the degree of this indicator is a high level.

## 7. HYPOTHESIS TESTING

H1: There is a relationship between brand image and consumer buying behavior. In this case, the following computations were made.

		Willingness to purchase	Brand image factors.
Willingness To purchase	Pearson correlation	1	.744**
	Sig (1-tailed)		.000
	N	292	292

\*\*Correlation is significant at the 0.01 level (1-tailed)

As indicated by the above table, there is a positive correlation between the brand image and willingness to purchase. The respective correlation value is .774 and it is significant at 0.05 level. Thus, the considering hypothesis can be accepted

H2: Product quality makes impact on consumer buying behavior  
The following computations supported to prove this hypothesis.

		Willingness to Purchase	Quality factors
Willingness to purchase	Pearson correlation	1	.702**
	Sig. (1-tailed )		.000
	N	292	292

\*\* Correlation is significant at the 0.01 level as the correlation value is .702 and it takes a

Positive value. So, the respective hypothesis is accepted.

H3: Product price makes influences on consumer buying behavior.  
The following computations indicate the information regarding this hypothesis.

## KMO and Bartlett's Test

Dimensions of willingness to purchase.

Dimension		Brand Images	Quality	Price
Kaiser - Mayer – Measure of Sampling Adequacy.		.609	.670	.556
Bartlett's Test of Sphericity	Approx. Chi-square	266	758	1005
	Df.	6	6	6
	Sig	.000	.000	.000

## Reliability

Since the data for this study were generated by using scaled responses, it was necessary to test for reliability. Cronbach's Alpha was calculated for each variable as indicated in the following table.

### Cronbach's Alpha values for Willingness to Purchase.

Variables	Cronbach's Alpha	Number of Items
Brand Image	.870	4
Quality	.766	4
Price	.780	4

Source: Survey data

The results of this table indicate Cronbach's alpha for each variable is at acceptable level. First, the variable, brand image is taken into account. The following statistical computations are relevant to brand image.

### Brand image

N	Valid	292
	Missing	0
	Mean	3.73
	Std. deviation	.689

The above table shows that the mean value indicator is 3.73 and it exists between 3.68 and 5.00. It says the degree of this indicator is at high level. The descriptive statistics for product quality standards are given below.

The respective sample profile is revealed below.

<b>Area</b>	<b>Number of firms</b>	<b>Number of Respondents</b>	<b>Total</b>
Colombo	10	10	100
Kalutara	10	10	100
Gampaha	10	10	100
Grand Total	30		300

The degree of brand image , Product quality and price factors were examined by summing and classifying each respondent's scores as into " Low", " Moderate" and "High" in terms of Willingness to purchase by employing the criteria given in the table below.

### **Measuring Criteria**

<b>Mean Value</b>	<b>Level</b>
1 - 2.33	Low
2.34 - 3.67	Moderate
3.68 - 5	High

### **Uni – dimensionality**

As the study is at the dimensions at a priory, the confirmatory factor analysis is necessary to provide a strong test for the theoretical specified dimensionality. However, since facility for running confirmatory factor analysis is not available to the researchers, exploratory factor analysis was performed by conversing the items of each dimension on the respective dimension. The items related to the each of five dimensions were highly loaded to the respective dimension arrived at a priory ensuring its uni- dimensionality. The Kaiser-Meyer — Olikn (KMO) and Bartlett's test for sampling adequacy was performed to examine whether the sample is adequate for performing factor analysis or not.

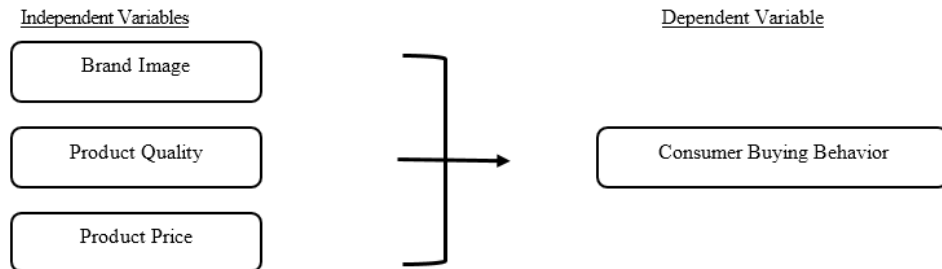
Howard and Sheth's theory of buyer behavior (1996) was the first to introduce the notion of brand consideration into marketing. Brand loyalty is defined as keeping preferable to a specific product or service (BNET Business Dictionary). Aaker and Keller (1991) believe that loyalty is closely associated with various factors, one of the main one being the experience of use. Customers may be loyal owing to switching barriers related to technical, economical or psychological factors, which make it costly or difficult for the customer to change. In another point of view, customers may also be loyal because they are satisfied with the brand, and thus want to continue the relationship. (Fornell, 1992)

A previous study has indicated that brand attributes are viewed as important elements in a consumer's decision - making. For example, Lau (2006) in his article has mentioned that there are seven factors that influence consumers' brand loyalty on certain brands. The factors are brand name, product quality, design, price, store environment, promotion and service quality. As a whole these factors are taken into the basket of brand image, product quality and product price.

An important element of a brand is the name and it has a potential to contribute to the brand equity. In many research, it is accepted as a vital indicator of quality and it affects consumers' quality perception, brand -name is an important cue that provides identification and continuity in the market place" (Pecotich and Ward, 2007).

## 5. RESEARCH MODEL

Based on the literature and the factor analysis made the following research model was constructed.



## 6. RESULTS

### Sample Profile

A total of 300 questionnaires was distributed among the respondents in three areas namely Colombo, Kalutara and Gampaha. Eight questionnaires were discarded due to improper fillings. Thus 292 questionnaires were accepted.

Consumer behavior has been an important research topic in this era. A review of existing theoretical background indicates shift from rational to psychological and social decision factors. However, even the recent models have not managed to embrace all the knowledge in the field of consumer behavior: sub conscious processes, the role of needs, goals and emotions (Bargh, 2002). Apart from leaving out these important findings the existing literature also lacks studies of decision that consumers are most concerned about, termed "big" or " Strategic decisions" (Bazed - man , 2001 , Gronhaug, Kleppe and Aukedal, 1987)

Perner (2008) stated that "Consumer behavior involves the study of the processes which individuals, groups, or organizations perform to acquire products, services, experiences or ideas to satisfy their needs and wants and how these processes have impacted the consumer and society"

"The buying behavior is considered a very complex phenomenon because it consists of a wide set of prior and after purchase activities" (Hansen, 2004). The buying process consists of five stages. Starting from recognizing a problem or in other words, recognizing need and wants that must be satisfied, the consumer then being to search for information related to that problem or need. After evaluating alternatives, the consumer makes the decision to purchase the most suitable alternative and the final stage comes after purchasing, when the consumer evaluates the choice being made.

There are four distinctive classes of consumer buying behavior identified by literature. These classes can be observed through the frequency of occurrence, emotional involvement, decision making complexity and risk. These types are known to be: programmed behavior, limited decision making buying behaviors, extensive decision- making buying behavior and impulsive buying (Arnould, 2002)

Limited -decision making buying behavior involves reasonable level decision — making and relatively low amount of information search in order to generate a purchase. An example of this type can be the purchase of clothes. When someone can easily get information on the product and its quality and spend short time in selecting the desired product. (East, 1997)

The extensive decision - making buying behavior is identified as being the opposing type to the limit decision - making buying behavior (Fornel, 1996). In this process the consumer would spend a relatively longer share of time in information search and would take longer period to make a decision regarding this purchase because this process is usually adopted when purchasing infrequent expensive product that takes a large share of the consumer's income and involves higher psychological risk (Peter and Olson, 2007)

The last type of buying behavior identified by literature is the impulsive buying. It is a decision made unconsciously and induced by an external stimulus that would make a specific product to appear attractive and irresistible to the consumer (Wells and Prensky, 1997).

It can be seen in the four listed behavior above, that the fundamental driving force behind these behavior is the consumers' emotion. It is the primary determinant of buying behavior that is highly influenced by some external and internal factors (Chaudhuri, 2006).

Although emotion is a subjective issue that differs according to individual attributes and situational contexts, it is still regarded as the most elemental determinant of planned and unplanned buying behavior (Havlena and Holbrook, 1986). The unplanned behavior matches greatly the impulsive buying which is driven by emotional forces. (Laras and Steenkamo, 2005).



### **Key objective**

- To examine the relationship between purchase intention and purchase behavior of consumers in respect of decorative paints.

### **Specific objectives**

- To find out relative influence made by price, quality, and brand image to purchase of decorative paints.
- To examine the degree of consumer buying behavior varying with the demographic factors.
- To provide recommendations for further actions to be taken to get the buyer behavior successful.

### **Research Questions**

Consistent with objectives, the following research questions were set.

- What is the relationship between purchase intention and buying behavior of consumers in respect of paints?
- What are the most important factors that contribute to purchase decorative paints?
- How far do the demographic factors intervene to the forces coming from the price, quality and brand image?

## **2. HYPOTHESES**

With the aid of the variables identified via factor analysis made based on the literature review the following hypotheses were formulated.

H1: There is a relationship between brand image and consumer buying behavior.

H2: Product quality makes impact on consumer buying behavior.

H3: Product price makes influences on consumer buying behavior.

## **3. METHODOLOGY**

In gathering data, larger attention was paid on primary data due to the fact that this is an empirical study in nature. In this context, questionnaire survey was made as a major method. Besides, when and where necessary interviews were held and observations were also made. Additionally, secondary sources were also associated for more information. In case of sampling, having considered the abundance of the consumers, Colombo, Kalutara and Gampaha areas were given place. The overall sample size was 300 respondents representing 100 respondents per each area. For selecting the respective sample, simple random sampling technique was employed. It was convenient to get the sample on comparable basis. For presenting data descriptive statistics was utilized. Also, for analyzing data correlation analysis was used.

## **4. LITERATURE REVIEW**

The concept of consumer buying behavior is very wide and it is unpredictable and unexpected within different types of each and every individual mindset. Consumer behavior means the study of individuals, groups or organizations about their process of selecting, securing, using and disposing the products, services, experiences or ideas to satisfy needs and wants and the impact of these processes on the consumer and the society.

Sri Lankan paints market needs around 35 million liters and out of that decorative paints market needs around 17 million liters. This particular industry covers a 15 billion. Paint is seasonality driven price elastic product and it depends upon economic growth and industrial sector. The Sri Lankan paints industry covers 60 manufacturers and they are big players who have captured around 97% market share. The decorative and industrial paints segments contribute 85% and 15% respectively to the volume (Sri Lanka Censuses, 2009).

The industry is driven by imported raw materials nearly, 300 odd raw materials are imported as petroleum by products. Thus, the global oil prices and their fluctuations directly affect the bottom-line of the industry. Also, the industrial paints segment is dominated by the organized sector. It is also more profitable segment.

The decorative paints industry is booming with the booming of construction industry. The construction industry has stagnated due to the continuous war dragging occurred during three decades. During this war period, the development of this particular industry was limited to the most secured areas. But today the situation has revolutionarily changed. So, overall country has paved the path to start construction industries. This climate has facilitated to further develop the decorative paints industry.

### **Problem of the study**

The Sri Lankan paints industry is engaged in producing decorative paints, wood care and steel paints and automotive paints. It consists of 60 manufacturers of whom six manufacturers are big players. They have captured 97% of market share. (Sri Lanka censuses, 2009). The decorative and industrial paints segments contribute 85% and 15% respectively to the volume.

Although there are 60 manufacturers as indicated by the preliminary survey, the problem emerged here was that due to what reasons 54 manufacturers are unable to compete with the six big players. In the point of fact, this was the focal issue area came into the researchers' mind.

### **Research gap**

Under the literature review made especially the most closed studies related to considering topic were associated. Here, performance and quality are more important in customer's point of view. According to Achilles Chandra pander, performance and quality are the most influencing factors for the customers when they choose paints. Apart from this, Kohli and Thakor (1997) have pointed out brand name is highly considered by the customers in purchasing paints. Kathleen and Gage (2004) have stressed service is the most important factor considered by the consumers in choosing products. Jennifer Potter, (1990) was biased above idea. But they have forgotten other factors that affect the choice of paints. In point of fact, the researchers got at there is a research gap to be filled up. It was able to fill up that gap by this study.

### **Objectives of the study**

In support of getting solutions for the predetermined problem, two types of objectives namely key objective and specific objectives were taken into account.

# CONSUMER BUYING BEHAVIOR OF DECORATIVE PAINTS INDUSTRY IN SRI LANKA

Ubayachandra, E.G. and Mendis, A.S.M.G.

*Department of Marketing Management, Faculty of Commerce and Management, University of Kelaniya, Sri Lanka*

## **Abstract**

*All paint companies today offer complete range of products for consumers as local ventures due to high import tax imposed by the government for importation of paints. On the ground of rapidly increasing demand for the decorative paints in consequence of increase in building, shelter and other governmental and private constructions, the decorative paints industry is competitively growing today. Besides, today this particular industry has become a more profitable one in Sri Lanka. On account of this preferable situation, the Sri Lankan decorative paints companies focus to offer user friendly and environmental friendly decorative products. This evidently shows commitment of the decorative paints companies towards better world. Though it is so, to the preliminary survey conducted it was noted that 95% of market share has been captured by seven companies out of the 60 local paints suppliers. Thus, the focal problem was why such a situation has come about. Of the four objectives included in the study, key purpose was to examine the relationship between purchase intention and purchase behavior of consumers in respect of paints. Consistent with the objectives the research questions were also set. Additionally, a research gap noted from literature review has also been filled up in this study. The research approach employed here is the deductive method and mix of both qualitative and quantitative perspectives were applied. The selected sample consists of Colombo, Kaluthara and Gampaha. Three hypotheses were formulated from respective literature review and better methodological choice was made to get the study systematic. More primary data were associated as this is an empirical in nature and from different documentary evidences secondary data were gathered. Descriptive statistics was used to present data and to analyse data, Correlation analysis was employed. Eventually findings were made and it was concluded that brand image, product quality and price have considerable impact on buying behavior of decorative paints. Accordingly, recommendations were produced. In addition some related researchable areas have also been pointed out at the end of the paper.*

**Keywords:** Emotional involvement, Brand image, Product quality, Buyer behavior

## **1. INTRODUCTION**

Paints industry is mainly categorized as decorative/ architectural paints and industrial paints sectors. Decorative paints are used mainly for painting interior and exterior of houses, office buildings, and factories. Industrial paints include automotive paints, marine paints, protective paints and special purpose coatings.

The Sri Lankan decorative paints industry has a long history. There was lot of houses in ancient era and still one can get at the decorative paintings in sacred places like Kandy, Sigiriya, Mathara, Anuradhapura and some other places in the country, It implies that the paint industry plays a vital role in the life of Sri Lanka people.

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awareness, and brand recognition were concern lower than the other factors when purchasing fermented dairy product.

### **Managerial Implication**

The paper reveals yoghurt as the most preferred fermented dairy product and the majority of consumers are tend to purchase two to six times for a week. It is recommended that developing a yoghurt brand is most profitable for the manufacturers as it easy to develop marketing strategy based on brand image. The brands attribute and perceive benefits are the key influencing factors for consumers' buying behaviour of fermented dairy products. Hence it is recommended that,

- ✚ when marketing a fermented dairy product manufacturer or marketers need to highly aware of brand attributes of price, shelf life, quality and color as well as the perceive benefits of health safety of the product, need satisfaction through the product, taste, smell, feel, delight, and frequency of use.

Brand attitude towards dairy product brands has a lower impact on consumers buying behaviour relative to the other two factors.

- ✚ Marketers need to consider more on advertisements to attract more consumers towards the brand. They need to establish the cost based advertising strategy to be positioned the brand in the consumer's mind. As well as needing to create a clear awareness of the brand in the consumer's mind and have to have the best way of recognizing the brand separately from substitute brands.

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Where,

CBB= Consumers' Buying Behaviour

$\beta_0$ = Intercept Parameter

$\beta_1$  = Slope Parameter

BA = Brand Attitude

BAT = Brand Attribute

PB = Perceive Benefit

$\varepsilon$  = Standard Error

The  $\beta$  coefficient of brand attitude indicated 0.149 when brand attitude was increased by one unit while other variables remain constant; the consumers' buying behaviour is increasing by 0.149 units. Additionally, brand attitude contributed significantly to the model since the P-value of 0.001 which was less than 0.05 levels of significance. Therefore null hypothesis  $H_0$  was rejected and the alternative hypothesis  $H_1$  was accepted. Hence, there was a significant relationship between brand attitude and consumers' buying behaviour.

Coefficient of brand attributes, one unit of increase in brand attributes while other variables remain constant, and consumers' buying behaviour is increasing by 0.242. Moreover, brand attributes predictor was significant at P-value of 0.000 is less than the 0.05 level of significance. Therefore null hypothesis  $H_0$  was rejected and the alternative hypothesis  $H_2$  was accepted. Hence, there was a significant relationship between brand attributes and consumers' buying behaviour.

According to the coefficient of perceive benefits, one unit of increase in perceive benefits while other variables remain constant, consumers' buying behaviour is increasing by 0.232. Furthermore, perceive benefits predictor was significant as P-value of 0.000 is less than the 0.05 level of significance. Therefore null hypothesis  $H_0$  was rejected and the alternative hypothesis  $H_3$  was accepted. Hence, there was a significant relationship between perceive benefits and consumers' buying behaviour.

## 7. CONCLUSIONS AND IMPLICATIONS

According to the Pearson correlation analysis, there is a strong positive relationship between brand image and consumers' buying behaviour. It was identified that Pearson correlation is 0.714 and P-value of 0.000. Further, there was a strong positive relationship between brand attitude, brand attributes, perceive benefits and consumers' buying behaviour. It can be clearly stated that the consumers' buying behaviour was increased when these three dimensions of brand image got increased. According to the multiple linear regression analysis, all three brand image dimensions have influenced on consumers' buying behaviour.

Brand attributes had highest impact on consumers' buying behaviour of fermented dairy products as regression output represent the highest beta coefficient. Hence, non-product related attribute such as price and shelf life and also product related attributes of quality and color have highly considered by the consumers. Perceive benefits were the second highest influencing factor in consumers' buying behaviour. Consumers were secondly considered functional benefits such as health safety of the product and need satisfaction through the product and also experiential benefits such as taste, smell, feel, delight, and frequency of use. Brand attitude had the least impact on consumers' buying behaviour of fermented dairy products than the other two variables. Hence an attitude towards advertisements, brand

### Multiple Regression Analysis

The multiple linear regression model below shows the predictive potential of brand attitude, brand attribute and perceive benefits on consumer buying behaviour of fermented dairy products.

**Table 4: Model Summary of Multiple Regression Analysis**

Figure	Value
R	0.714
R Square	0.516
Adjusted R Square	0.509
Standard error of the Estimate	0.26039
Significance F Change	0.000
Durbin-Watson	2.247

Source: SPSS output from field information

It is evident from the results that, brand image dimensions of brand attitude, brand attribute and perceive benefits have explained 51.6% of the variance in the consumers' purchase behaviour of the dependent variable. Therefore, it defined that there is 48.4% of unexplained variation in this model. The explained variance of 0.516 is substantially higher value and therefore it is significant. Standard error of estimation is 0.26039. It represents that model is fitted well as mean value of dependent variable 4.145 greater than standard error of estimation.

**Table 5: Multiple Regression Analysis**

Predictor	$\beta$ Coefficients	Standard Error	t-Value	P-Value Significance
Constant	1.611	0.177	9.101	0.000
Brand Attitude	0.149	0.042	3.532	0.001
Brand Attribute	0.242	0.048	5.034	0.000
Perceive Benefits	0.232	0.047	4.902	0.000

Source: SPSS output from field information

In according to the results given in table 4.13, constant ( $\beta_0$ ) was implied that while all three brand image dimensions remain zero, consumers' buying behaviour is 1.611. The P-value of the constant is 0.000 and it denotes that statistically significant at 0.05 levels of significance. There is a positive relationship between brand image and consumers' buying behaviour as beta coefficient represents positive value (1.611).

Accordingly multiple linear regression model can be expressed as follows.

$$CBB = 1.611 + 0.149 BA + 0.242 BAT + 0.232 PB + \epsilon$$



**Table 2: Correlation between Brand Image and Consumers' Buying Behaviour**

Dimension	Pearson Correlation	P – Value
Brand Attitude	0.526	0.000
Brand Attribute	0.622	0.000
Perceive Benefits	0.628	0.000

Source: SPSS output from field information

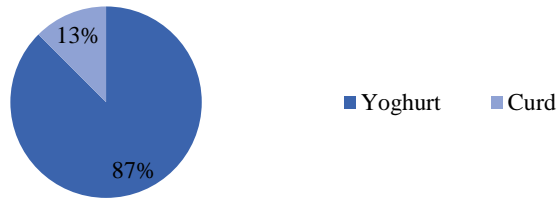
Brand attitude and consumers' buying behaviour has a strong positive relationship because the correlation coefficient between brand attitude and consumers' buying behavior in fermented dairy products was 0.526. Correlation coefficient of brand attribute also implies a strong positive relationship of 0.622 and Perceive benefits and consumers' buying behaviour has a strong positive relationship as 0.628. According to the significance of all three independent variables as of P-value 0.000, it implied that the test is highly significant and rejects the null hypothesis (H0) and accepts the alternative hypothesis. Hence there is a positive relationship between brand attitude, brand attributes, perceiving benefits and consumers' buying behaviour in fermented dairy products at the 95% confidence level.

**Table 3: Summary of Correlation Analysis**

	Pearson correlation	Relationship
Brand Attitude	0.526	Strong positive
Brand Attribute	0.622	Strong positive
Perceive Benefit	0.628	Strong positive

Source: SPSS output from field information

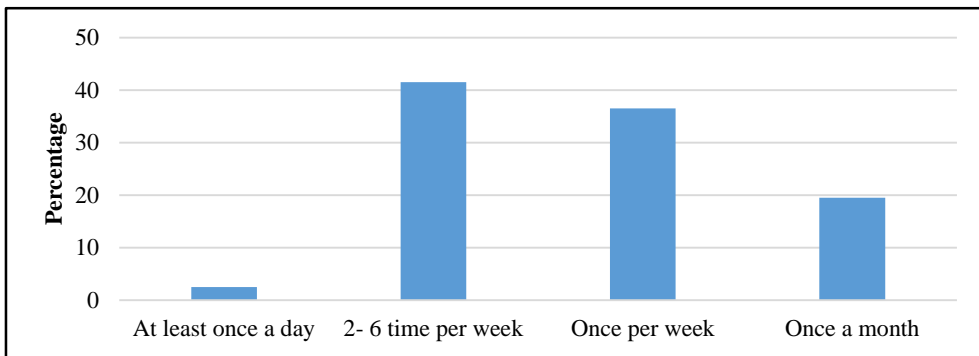
**Figure 2: Distribution of most purchasing fermented dairy product category**



**Frequency of Purchase**

Consumers are tending to purchase their preferred fermented dairy brand two to six times per week (41.5%) which represents the highest consuming percentage. Further 36.5 percent preference purchases by once per week and 19.5 for once a month.

**Figure 3: Frequency of Purchase**



**Correlation Coefficient Analysis**

**Table 1: Correlation between Brand Image and Consumers’ Buying Behaviour**

Dimension	Pearson Correlation	P – Value
Brand Image	0.714	0.000

Source: SPSS output from field information

According to the table 2, correlation between overall brand image and consumers’ buying behavior is 0.714. It denoted that there is a strong positive relationship between independent and dependent variable. P-value is 0.000; hence it has been supported for the relationship.

### *Hypothesis 1*

H0: There no positive relationship between brand attitude and consumers' buying behaviour of Fermented dairy products

H1: There is a positive relationship between brand attitude and consumers' buying behaviour of Fermented dairy products

### *Hypothesis 2*

H0: There no positive relationship between product attributes and consumers' buying behaviour of Fermented dairy products

H2: There is a positive relationship between product attributes and consumers' buying behaviour of Fermented dairy products

### *Hypothesis 3*

H0: There no positive relationship between perceiving benefits and consumers' buying behaviour of Fermented dairy products

H3: There is a positive relationship between perceiving benefits and consumers' buying behaviour of Fermented dairy products

## **5. METHODS**

### **Sampling procedure**

Sample size is 200 fermented dairy product consumers who live in Western province based on three districts of Colombo, Kalutara and Gampaha. Those three districts were selected as they represent the highest average monthly household expenditure on Milk and milk food, by districts and sample has been proportionately selected. Systematic sampling technique has been adopted and the sample unit of consumers selected from retail shops and supermarkets to explore the unbiased perceptions about the questions in the questionnaire.

### **Data Collection and Analysis**

Primary data were collected through a structured questionnaire and data analysis has been carried out to achieve the objectives of the study. Statistical Packages for Social Science (SPSS) version 16.0 software is used for analysis of data.

## **6. FINDINGS AND DISCUSSION**

### **Cronbach's Alpha Reliability Analysis**

Cronbach's Alpha was used to measure the reliability and the questionnaires' validity and the analysis has been proven the reliability as the alpha values are greater than the acceptable level of 0.7 alpha value.

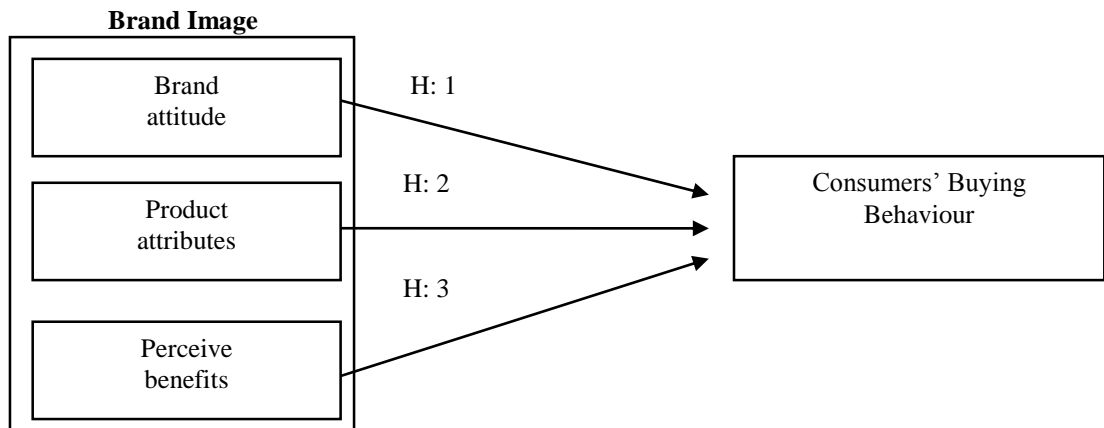
### **Most Purchasing Fermented Dairy Product Category**

Regarding which most purchasing fermented dairy product category among the yoghurt and curd were shown by the figure 2. Most customers' preference was yoghurt which is amounted 87% and 13% of curd.

services to satisfy their needs. Better awareness of consumer buying behaviour is a positive contribution to the country's economic state and quality of goods, (Egen, 2007). Further, high quality of domestic products and services lead to sophisticated domestic customer base (Blackwell et al., 2006). As most of researchers have identified the relationship between brand image and consumers' buying behaviour, they have investigated the how customer purchase behaviour affected by the brand image. Thakor and Katsanis (1997) pointed out a positive brand image may make up for an inferior image of the origin country and raise the possibility of the product being selected. Blackwell et al., (2001) stated that consumer behaviour is based on the activities which are included in a product or service consumption or deposition. Alexander (2008) pointed out engaging in price wars and building brand images as a way of influencing customers purchase behaviour. Pitta and Franzak (2008) argued the brand heavily influences on food products buying behaviour and product brand emphasizes the quality of the food product and it creates an image in the consumer's mind. Ultimately, that brand image becomes the basic motive for the consumers' choice of particular product brand (Vranesevic and Stancec, 2003). According to the arguments, identifying consumer needs and wants leads to long term benefits to the business. Consumers are able to recognize a product, evaluate the quality, lower the purchase risk and obtain certain experience through brand image.

### 3. CONCEPTUAL FRAMEWORK

Conceptual framework displays the relationship between brand image dimensions and consumers' buying behaviour. The conceptual framework has been derived according to Keller, (1993) and the Brand image dimensions have been considered as independent variables whereas consumers' buying behaviour is a dependent variable.



**Figure 01: Conceptual Framework**

Source: (Keller, 1993)

### 4. HYPOTHESIS DEVELOPMENT

Hypotheses will be tested according to study to achieve objectives of the research. Hypotheses were developed to derive the relationship between brand image dimensions and consumers' buying behaviour.

functions as market entry, source of added value of products; value stored in the company and can be a force in the distribution of products. Brand image helps to create a pioneer product and that will lead to make benefit of market entry. Through brand extension it could be able to develop a strong brand of a product from one market to another market segment (Aaker and Keller, 1990; Boush and Loken, 1991) and it will help to reduce the cost of introducing new product Brand image can add value to a product by changing the experience and perception towards the product (Aaker and Stayman, 1992; Puto and Wella, 1984). The strong brand image can create a powerful distribution channel. According to Aaker (1991), the brand does not only play an important role horizontally, in forcing their competitors, but also vertically, in the acquisition of distribution channels, to have more control and bargaining power on the requirements made distributor. Strong brand image can satisfy its customers and strong brand image will make customers loyal (Davies et al., 2003, Earls et al., 2004). Brand image characterized based on different ways by the most of the researchers. According to Keller, (2006) major categories of brand image are attributes, benefits and attitudes were identified. Hence brand attributes, perceiving benefits and brand attitudes can identify as one of the common way to categorize the brand image. Brand attributes are those descriptive features that characterize a product (Keller, 2013) and also product can be viewed as a bundle of intrinsic and extrinsic attributes, or as a bundle of perceived attributes (Stockmans, 1999). It gives information related to the brand name (Keller, 1993) and the brand attributes is unique to the specific brand and also specific to the consumers (Meyers-Levy, 1989). Attributes can be further divided into two main categories which are product related attributes and non product related attributes (Myers, James, & Allan, 1981).

Accordingly product related attributes are defined as the ingredients necessary for performing the product or service function sought by consumers and non product related attributes are defined as an external aspect of the product or service that relate to it purchase. Brand benefit refers what consumers think the product can do for them (Keller, 2006) and what consumers seek when purchasing a product/brand (Kotler,1999). Benefits can be further distinguished into three categories; they are functional benefits, experiential benefits and symbolic benefits (Park, Jaworski, & MacInnse, 1986). Functional benefits are the more intrinsic advantage of product or services. And also these functional benefits linked with the physiological needs and safety needs. Experiential benefits refer what it feels like to use the product or service. Symbolic benefits are the more extrinsic advantage of the product or service consumption. Brand attitude defined as covert behaviour of consumers; they are not overt behaviours (Kim 2002). Attitude is an internal reaction of a person and it's difficult to observe. According to the Gilbert (1995), it is a pervasive feeling and according to the Wallendorf (1979), response towards the brand may favourable or unfavourable due to their brand attitude.

### **Consumer's Buying Behaviour**

Consumer purchase behaviour is what influences consumers to purchase product or services (Kotler,2000) and customer purchase behaviour is what influences consumers to purchase (Richards,2009). Final consumers, both individual and households, whom buy goods and services for personal consumption is referred as consumer buying behaviour (Kumar, 2010) and further refers as the activities in which people acquire, consume and dispose products and services (Blackwell et al., 2001). Also, it is a complex and dynamic issue and according to the author it cannot be defined commonly (Blackwell et al., 2006). It is defined as a set of activities which involves the purchase of goods and services (Stallworth, 2008). Schiffman and Kanul (2000) defined consumer buying behaviour as to select and purchase products or

- ✚ To identify the relationship between the brand image and consumers' buying behaviour of Fermented dairy products.
- ✚ To recognize the most influencing factor that has an effect on consumers' buying behaviour of fermented dairy products.

## 2. LITERATURE REVIEW

### Brand image and attitude as vital factors

Customer based brand equity occurs when the consumer has a high level of awareness and familiarity with the brand and holds some strong, favorable and unique brand association in memory. A brand occupies a very important place in the mind of modern customers (Sawant, 2012). Branding is not just creating a name but it includes many contributions. The American Marketing Association (1994) defines that brand as a “name, term, sign, symbol or a combination of them intended to encourage prospective customers to differentiate a producer’s product from those of competitors”. According to the most of researchers, brand is defined as a name, sign, symbol or design, or a combination of all these indicators and its differentiated product or service from its competitors (Aaker, 1997, Kotler, 2005). Kotler (2000) stated that a good brand will come to boost the firm’s image and it is a promise (Morel, 2003) and also, it is a kind of relationship that involves trust (McNally and Speak, 2004). Once the sufficient level of brand awareness is created, marketers can put more emphasis on crafting a brand image. Brand image is the current opinion of the customers about a brand. According to the Vineath (2007), brand image is a unique set of associations in the mind of the customer concerning what a brand stands for and the implied promise the brand makes. Keller, (1993) defined that it is a perception about a brand as reflected by the brand associations held in consumer memory and brand image assumed as a set of brand associations that collected in the minds of consumers (Mowen and Minor, 2001). Simply it means a mental picture in the consumer’s mind of the offering and he stated that the brand in customer’s mind is linked to an offering (Dobni and Zinkhan, 1990). Brand image is a unique bundle of associations within the minds of target customers (Dwayne, 2005). In other words, brand image is a form or a particular description of trace of meaning left in the minds of the consumer audience (Wijaya, 2011). Sherry (2005) emphasises the source that provides the brand to accomplish and remain resonant and adequate in consumers’ minds. It is regarded as a consumer constructed concept due to consumers creating a personal or image related to the brand with regard to their knowledge and perceptions (Nandan, 2005). However, most scholars have described that brand image as the perceptions and beliefs held by the consumer, as reflected in the association held in consumer memory.

Scholars have identified the roles and functions of brand image in various ways. The central aspect of a brand is its image (deChenatony and Riley, 1998) and brand image holds the customers for a specific an offering and its influence them to act toward a specific product or service (Keller, 1993). Aaker (1991) stated that consumers over again tend to buy products that have famous brand for the reason that they feel more comfortable with things that are already known. According to the Hung (2008), perceptions about brand differ among consumer to consumer and it helps marketers’ to differentiate products, position and extend brands (Low and Lamb, 2000). Furthermore, Danesi (2006) proposed that the use of brand name enables consumers not only to recognize certain goods and distinguish them from others, but also to associate connotative meanings to them and it allows them to decode brand image. According to the Kahle and Kim (2006), revealed that brand image has multiple

industry by increasing the domestic production. Poor marketing has been identified as a primary issue for the development of the livestock sector. Brand image long has been recognized as an important concept in marketing (Gardner, Burleigh, and Sidney, 1955). According to the Richards (2009), the Customer purchase behaviour is what influences consumers to purchase products or services hence the brand image can create a significant impact on consumer buying behaviour. Therefore, it is critical to enhance the marketing strategies towards dairy products in Sri Lanka as the intent of achieving successful local dairy industry. Fermented dairy product has been given more importance in present context as to the improvement of nutrients and it has been providing vital importance in the human diet. According to the International Dairy Federation, Fermented dairy products are defined as the milk products prepared from skimmed milk or not with a specific culture. The most important factor of this product category is that micro flora kept alive until sale to the consumer. Fermented dairy products categorize under three types. They are moderately sour type with a pleasant aroma, Sour and very high sour type and Acid-cum alcohol in addition to lactic acid (Marwaha and Arora, 2000). This paper focuses on sour and very highly sour types fermented milk products, curd and yogurt brands. This attempt is a significant endeavor in promoting local dairy industry through identifying the consumer buying behaviour.

### **Problem statement**

There has been limited research in the area of dairy industry and consumer buying behaviour in Sri Lanka. Research on consumer behaviour has not been investigated properly, thus, many scientists hold on to different assumptions about stimuli and factors influencing consumer behaviour (Bray, 2013). A positive brand image will enable marketing program can be liked and be able to produce unique associations to the brand that always exist in customer retention (Schiffman and Kanuk, 2010). Thus, it is important to see whether the brand image impact towards consumer buying behaviour. Hence this research is focusing the impact of brand image on consumers' buying behaviour towards fermented milk product brands which is a special range under milk and milk products.


### **Hence the primary research questions has been developed as;**

1. Whether the brand image effects on consumers' buying behaviour of Fermented dairy products?

The secondary research questions have been developed as;

- i. What is the relationship between the brand image and consumer buying behaviour of Fermented dairy product?
- ii. What is the most influencing factor in consumers' buying behaviour of fermented dairy products?

### **The research objective has been developed to answer the identified research gaps, Primary research objective has been developed as;**

-  To determine the impact of brand image towards the consumers' buying behaviour of Fermented dairy products.

Secondary objectives have been developed as:

# DOES BRAND IMAGE IMPACT ON CONSUMERS' BUYING BEHAVIOUR? SPECIAL REFERENCE TO FERMENTED DAIRY PRODUCTS

Kaushalya, A. M. and Fernando, P.I.N.

*Faculty of Management, Uva Wellassa University of Sri Lanka*

## Abstract

*Dairy sector is one of the most important of all livestock sub-sectors in Sri Lanka with a grate potentiality to contribute economic development. Categories of fermented dairy products are usually high energy yielding food products as well as popular among consumers. The research question has been developed as whether the brand image effects on consumers' buying behaviour of Fermented dairy products and the main research objective developed to determine the impact of brand image toward consumers' buying behaviour of Fermented dairy products. Both primary and secondary data had been collected and proportionately chosen 200 respondents as the sample. Structured questionnaire has been used as the survey instrument to primary data collection. Brand image dimensions; brand attitude, brand attribute and perceive benefits were considered as the independent variables and consumers' buying behaviour was considered as dependent variable and the SPSS 16 package has been used to analyze. Results indicated that there is positive relationship between the brand images on consumers' buying behaviour as brand attitude, brand attribute and perceive benefits. The study concluded that brand attribute and perceive benefits significantly impact on consumers' buying behaviour of fermented dairy product brands rather than brand attitude. Recommendations provided as to focus on marketing strategies towards brand attributes of price, shelf life, quality and color as well as the perceive benefits of health and safety of the product, need satisfaction through the product, taste, smell, feel, delight, and frequency of use. Further establishing a cost based advertising strategy to be positioned the brand in the consumer's mind has been proposed.*

**Keywords:** Brand attribute, Brand attitude, Consumers' buying behaviour, Perceive benefits

## 1. INTRODUCTION

The agricultural sector recorded a growth of 4.7% in 2013 and its share of GDP contribution was 10.8% in 2013. The livestock sector is one of the major parts of the agricultural sector. The livestock sector contributed to 0.8% of the GDP in 2013 (CBSL, 2013). Dairy sector is the most important in livestock sub sectors as the milk production is an integral part of the food consumption. Dairy products have contained with an excellent source of nutrients. According to the Miller et al. (2000), the recommended daily dairy product consumption is about 200-400 ml for adults and 600-800 ml for children and pregnant women. Brand image can be defined as the perception of a brand through brand association in the minds of customers (Sondohet al., 2007). It is about the perception of consumers that having regarding a particular brand. According to Department of Census and Statistics from the Ministry of Livestock and Rural community development, the domestic milk production only contributes about 17% of the requirement and the rest is imported. When comparing the imports of milk and domestic milk production in 2000 to 2012 shows a significant increase in the dairy sector. Due to above situation government is focused on the dairy Subsector to this sector into a local



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the LPG marketing companies should take the following steps to inculcate the importance of being profit-oriented.

- Awareness session by way of regular meeting on operational aspects of marketing.
- Assigning targets in each business function such as quantitative, i.e. – Sales targets and qualitative i.e. expected marketing and customers service levels.
- Launching a reward system and recognizing best performance.
- Evaluating and suggesting, areas for development by way of development plans.
- Replacing poor performers with new dealerships.

## **12. SUGGESTIONS**

The following are the suggestions to transform the LPG dealers to become market-oriented.

- The LPG dealers should be educated with regard to the intelligence collection, intelligence dissemination and response to intelligence and so on. Indeed, this should be measured and rewarded via a competition among LPG dealers.
- A better monitoring system should be introduced to LPG dealers to monitor their performance on regular basis.
- The dealers should be trained well on the marketing philosophy and the societal marketing concept via workshops, lecture sessions, training programs and vocational and career development programs.
- The LPG dealers should be educated on the concept of customer sovereignty, business ethics and social responsibility.
- Dealers' inter functional commitment and linkage should be further enhanced and a sound policy should be followed to maintain and develop dealer customer relationship.
- The LPG companies should play a key role in making dealers market oriented by regular monitoring, performance measurement and rewards and recognition.
- Finally, a thorough and broad based understanding should be given to LPG dealers on need analysis, customer and competitor orientation, inter and inter functional orientation, market orientation, mass customization, market positioning, strategy formulation, strategy implementation, and evaluation , designing of marketing mix, determining promo tools and core marketing concepts.

## **13. SUGGESTIONS FOR FURTHER RESEARCH**

Throughout the study, an endeavor was made to make a search of the degree of market orientation of LPG dealers in Sri Lanka. During the period of making the data survey in this particular study, further researchable areas were found. Accordingly, some noticeable researchable areas are cited below for the purpose of facilitating to those who are interested in this particular field.

- Market potentiality for LP gas dealers in Sri Lanka.
- The degree of commercialization of LP gas dealers in Sri Lanka
- Buyer behavior with LP gas dealers in Sri Lanka
- Market orientation of the LPG companies in Sri Lanka
- Effect of monopolistic behavior of LP gas industry in Sri Lanka

Thus, market orientation may not be culture bound. This study confirms that further attention to most scales in market orientation is essential.

In order to investigate the convergent validity of the measurement, the extent of influence of intelligence collection, Intelligence dissemination and response to intelligence were examined in relation to sales performance. The behavioral dimensions have been validated for measuring behavioral aspects of market orientation. It was concluded that the market oriented organizations outperform all others in their dimensions as motioned in the theoretical model of this study. It can be further concluded that market orientation is known to have a positively impact on organizational performance.

In the context of LPG dealers, the analysis shows that the majority of LPG dealers have failed to practice the principles of market orientation. In other words, they have failed in all aspects of market-orientation such as collection of intelligence, dissemination of intelligence and response to intelligence. This shows that the LPG dealers have been poorly focused in terms of collecting. Information relating customers and competitors. Eventually, this leads to lack of response to customer needs and competitor activities.

The result of the Pearson correlation analysis that were performed for each variable explicitly and numerically shows that a strong relationship exists between market orientation and sales performances of LPG dealers. In other words, the numerical explanations explaining the degree of influence are as follows.

When one unit of market orientation positively varies, the corresponding positive variance of sales performance of LPG dealers is 71%.

When one unit of collection of intelligence positively varies, the corresponding positive variance of sales performance of LPG dealers is 56%.

When one unit of dissemination of intelligence positively varies, the corresponding positive variance of sales performance of LPG dealers is 77%.

When one unit of response to intelligence positively varies, the corresponding positive variance of sales performance of LPG dealers is 46%.

Finally, it comes the implementation of their strategies to become market-oriented so as to enhance their business performance. This includes a change the way they operate in terms of getting to know the customer better and responding through a planned manner, which must be originated within the organization. By introducing such Changes, dealers can progressively increase their orientation and thus the value they deliver to the customer. Further by monitoring the results of re-orientation efforts and managing the knowledge that they develop from their experience, the LPG dealers can further fine-tune their practices and enhance their adoption to the market environment in which they operate.

## **11. IMPLICATIONS**

As analysis of data revealed, the knowledge of LPG dealers on basic and operational marketing aspects is the key to include them to marketing and customer service and basic business management practices which eventually lead to sales and profitability. Therefore,

- The labour management of the LPG dealership too seemed far below the expectation and that has contributed to the so-called lack of market-orientation and poor sales performance. This has not only impacted on their role in collecting market and customer information but also on the side of the delivery of customer satisfaction through their product/service offering. This must be improved, which leads to improve the quality of their service levels. This is one of the elements that have caused blockages in the overall market-oriented function.
- On the other hand, the tendency to collect intelligence by LPG dealers is an implication of their degree of customer orientation and competitor orientation. The statistical evidence presented has explicitly highlighted that fact the LPG dealers are poor in the context of the collection of intelligence which stands as a blockage in becoming market-oriented, In other words, the LPG dealers seemed careless on the side of getting to know their customer better.
- The tendency to disseminate intelligence too seemed considerably poor which has been statistically explained. Hence, this shows that the inter-functional coordination and communication among dealers are at very poor level. In other words, the failure of LPG dealers to disseminate information stands as a blockage in the path to become market-oriented. The failure dissemination of intelligence under the respective hypotheses testing was explicitly shown as a key factor that has made LPG dealers less market-oriented.
- In the context of responding to intelligence, it shows that the responses of LPG dealers regarding different aspects of their business to responded to market intelligence stands at a considerably low level. This shows that the high significant category is zero and the moderate response category represents 64.14% of LPG dealers of the sample. Accordingly, 35.86% of the sample is in the low significant category.

Overallly say, the degree of market orientation of LPG dealers is considerably poor, which has adversely impacted on the sales performance of LPG dealers. From marketing point of view, it can be said that their marketing practice and the selling mechanism are almost ineffective. The test results showed that the all independent variables are strongly correlated with market orientation and sales performance of LPG dealers.

## **10. CONCLUSION**

The study produced a great deal of insights relating to the degree of market orientation and sales performance of LPG dealers who are dispersed in the Country. Thus, the in depth analysis of the facts revealed some interesting insights, which can be beneficial not only to the LPG dealers but also to the customers and the industry as a whole.

The influence of market orientation on LPG dealer's sales performance is rated high as per the statistical analysis that is presented in the data analysis section. In other words, the marketing practices of LPG dealers such as collection of LPG dealers, dissemination of intelligence and response to intelligence is crucial for becoming market oriented, that eventually get transformed into sales performance as numerically shown in the data analysis section.

The so-called market-orientation consists of three elements such as Intelligence collection, intelligence dissemination and repose to intelligence. successful test of the model shows that adequate variations exist in market orientation and other constructs in the model.

Along with the contextual texture of the variables represented in the model, data were analyzed by testing hypotheses, which explicitly confirmed the theoretical aspect of marketing in the context of LPG dealers in the Country.

Eventually, it was noted, that a stronger relationship appeared among the independent variables such as collection of intelligence, dissemination of intelligence and response to intelligence moderating variable, market orientation and dependent variable, sales performance. Based on the test results, it was able to provide a better set of findings as well as a set of suggestions mentioned below.

## **9. FINDINGS**

As per the study, it was able to discover the salient points that affect the sales performance of LPG dealers in the industry.

- The finding shows that only 9.1% of respondents have achieved 100 percent sales targets and other 90.9% of respondents are below the expected level of sales performances. In other words, there is a considerably higher number of LPG dealers who have failed to achieve their sales targets. Furthermore, about 45.5% of LPG dealers have not sold the entire product range of LP gas. Therefore, the findings confirmed that the sales performance of LPG dealers are far below the required level. The reason behind the above situation is directly attributable to poor market orientation of LPG dealers, which was measured statistically. As indicated by the test results, the LPG dealers are poor in case three elements such as collection of intelligence, dissemination of intelligence and response to intelligence, which eventually has led to poor sales performance of LPG dealers.
- Another finding is the poor marketing and management practice which is prevalent over majority of LPG dealers in the Country. Especially, it should be mentioned that the overall management style of the dealers have been considerably inflexible and traditional. This is highly visible in making efforts to collect information, disseminate intelligence and respond to intelligence and in the overall context of their day-to-day operations. This is where the LPG dealers seemed to have failed in the inter-functional coordination in terms of collection, dissemination and response to market intelligence. Similarly, the crewmembers of dealers seemed lack of participation, that, has led to poor product offering to the customers. Therefore, this has caused to poor market orientation that eventually has led to poor sales performance.
- The LPG companies too have poor in market intelligence in terms of their customers, potential users and their needs and wants, that has adversely impacted on their relationship with respective LPG dealers in the Country.
- On the other hand, it seemed that the lack of willingness of LPG dealers to sell the LPG accessory range not only highlights the lack of enthusiasm of LPG dealers to become market-oriented, but also to go the extra mile to perform in terms of sales. The lack of LPG dealers to place emphasis on market-orientation was unquestionably apparent.
- In case of overall management function of LPG dealerships, some of the key pessimistic factors such as supply issues, poor site maintenance, lack of capacity planning and functional delays were too noted and they have added to the issue of poor market orientation. This has invariably led to lack of sales performance, which has been numerically shown under the statistical data.

H3 – Sales performance is positively affected by intelligence dissemination through market orientation. The following test results imply the influence made by intelligence dissemination on sales performance.

**Table 12: Correlations (iii)**

	<b>Sales</b>	<b>Intelligence dissemination</b>
Pearson correlation	1	.766
Sig (2-tailed)	198	.000
N		198
Intelligence dissemination		
Pearson correlation	.766	1
Sig (2-tailed)	.000	198
N	198	

The rest results show the correlation coefficient is .766 at .01 level and at 95% confidence level so, there is a relationship between intelligence dissemination and sales performance. Accordingly respective hypothesis can be accepted.

H4 – Response to intelligence makes influence on sales performance through market orientation. The following table reveals the test results.

**Table 13: Correlations (iv)**

	<b>Sales</b>	<b>Response to Intelligence</b>
Pearson correlation	1	.457
Sig (2-tailed)	198	.000
N		198
Intelligence dissemination		
Pearson correlation	.457	1
Sig (2-tailed)	.000	198
N	198	

Here Pearson correlation coefficient is .457 and it is significant at 95% confidence level. Based on these test results respective hypothesis can be accepted.

## **8. SUMMARY**

More specifically say, under the present study an attempt was made to seek how far Sri Lankan LPG dealers are oriented in their respective business. In this case, a well-formed methodological choice was applied to work out the overall study within the self-constructed theoretical model. Entire study was systematized as per the research methodology. The individual characteristics such as age, educational level and the number of years of service in the related field were not associated as they are not relevant to the problem that was focused. The primary determinants of the market orientation were considered as intelligence collection, intelligence dissemination and response to intelligence which are more related to the individual characteristics of LPG dealers in Sri Lanka. Thus, the overall data analysis part was geared up by the theoretical model built.

As indicated by mean value, it is understood that LPG dealers have low tendency to become market-orientation here the central tendency values also belong to low score category. It is also a better evidence. In that sense it can be said that in all respect LPG dealers market orientation is highly poor.

## 7. TESTING HYPOTHESES

H1 - There is a direct relationship between market orientation and sales performance. Based on the following test result this hypothesis was checked.

**Table 10: Correlations (i)**

	<b>Total Market orientation</b>	<b>Sales</b>
Total		
Market orientation	1	.712
Pearson correlation	198	.000
Sig (2-tailed)		198
N		
Sales		1
Pearson correlation	.712	198
Sig (2-tailed)	.000	
N	198	

Here Pearson correlation between sales performance and total market orientation is .712. This is significant at 0.01 levels (2-tailed). Therefore, it seems that there is a considerable relationship between sales performance and total market orientation. Accordingly respective hypothesis can be accepted.

H2. Intelligence collection is positively correlated with sales performance with the influence made by market orientation. Following table shows the respective test results.

**Table 11: Correlations (ii)**

	<b>Sales</b>	<b>Intelligence collection</b>
Sales		
Pearson correlation	1	.558
Sig (2-tailed)	198	.000
N		198
Intelligence collection		
Pearson correlation	.558	1
Sig (2-tailed)	.00	198
N	198	

Since correction coefficient is .558 and it is significant at 0.01 levels, it is understood that 95% confidence level, there is a relationship between intelligence collection and sales performance across market orientation. Thus respective hypothesis can be accepted.

**Table 7: Descriptive statistical measures of response to intelligence**

Measures	Values
Mean	22.9293
Standard Error of Mean	0.36290
Median	24.0000
Mode	24.00
Standard deviation	5.10649
Variance	26.076
Range	17.00
Sum	4540.00

Source: Survey data

In checking all above values it seems that all measurements of central tendency belong to moderately response category. Accordingly, LPG dealers are somewhat good in respect of response to intelligence. In concerning market orientation made by LPG dealers, the following results were found.

**Table 8: The degree market orientation**

Market orientation	Frequency	Percent
Strongly Market oriented	00	00
Moderately Market oriented	93	46.9
Not Market oriented	105	53.1
Total	198	100

Source: Survey data

In marking a review of above figures, the poor situation to be noted is that majority of LPG dealers are pertaining to not market oriented category. They are almost nil in respect of strongly market-oriented category. Compared to not market-oriented category moderately market oriented category is also at poor situation. The following table depicts descriptive statistical computations made relating to measurements of central tendencies.

**Table9: Descriptive statistics of overall market orientation**

Measures	Values
Mean	58.257
Standard Error of Mean	0.99605
Median	58.0000
Mode	41.00
Standard deviation	14.01571
Variance	196.440
Range	38.00
Sum	11535.00

Source: Survey data



**Table 5: Descriptive statistical enumerations corresponding to intelligence dissemination**

Measures	Values
Mean	13.8687
Standard Error of Mean	0.32233
Median	3.0000
Mode	19.00
Standard deviation	4.53558
Variance	20.572
Range	12.00
Sum	2746.00

Source: Survey data

As indicated by the above table it can be noted that median and mean and mode values are 3.0, 13.8687 and 19.0 respectively. Though mode value represents the moderately important score category both median and mean belong to, low level dissemination category. Thus majority of LPG dealers have less involvement in intelligence dissemination among respective persons.

In reviewing data pertaining to response to intelligence represented in the following table in all respect it is also at almost a poor level.

**Table 6: Response to intelligence**

Response to intelligence	Frequency	Percent
Highly Response to intelligence	00	00
Moderate Response to intelligence	127	64.14
Low Response to intelligence	71	35.86
Total	198	100

Source: Survey data

This table shows that making high response is almost zero. Compared to low category majority of LPG dealers show moderately response to intelligence. Whatever the situation is not at appreciable level due to the fact that high response category scores zero value. Relatively to other two independent variables this is somewhat at satisfactory level as it takes high values in respect of moderately response to intelligence.

The following descriptive statistical measures show the above situation clearly.

**Table 3: Descriptive statistics of intelligence collection**

Measure	Value
Mean	23.0101
Standard Error of Mean	0.53095
Median	23.0000
Mode	30.00
Standard deviation	7.47109
Variance	55.817
Range	23.00
Sum	4556.00

Source: Survey data

According to the mean value in the above table it seems that LPG dealers have a less involvement in collecting intelligence from both customers and competitors. The median and mode values further confirm this unpleasant climate well. The following table reveals the degree to which LPG dealers make an effort to disseminate intelligence among their staff and other related persons.

**Table 4: Intelligence dissemination**

Intelligence dissemination	Frequency	Percent
Highly disseminate intelligence	00	00
Moderately disseminate intelligence	73	36.87
Low level of intelligence dissemination	125	63.13
Total	198	100

**Source: - Survey Data**

As revealed by the above table noticeable matter to be taken into consideration is that all LPG dealers are almost poor with regard to high dissemination of intelligence. In case of moderately dissemination of intelligence the frequency as well as percentage is high in respect of low level of intelligence dissemination, so in all respect intelligence dissemination made by LPG dealers is almost poor.

The following table further reveals the situation relating to this particular matter.

## 5. RELIABILITY AND VALIDITY

The reliability of a measure indicates the extent to which it is without bias (error free) and hence ensure consistent measurement across the different items in the instrument (Umasekaran,2006) In other words, the reliability of a measure is an indication of the stability and consistency with the instrument measures the concept and helps to assess the “goodness” of a measure.

Under the validity the euthenics of the cause - effect relationships (internal validity) and their generalizability to the external environment (external validity) are concerned (Umasekaran, 2006) validity refers to the extent to which an instrument measures what it is supposed to measure (Kethari, 1999) The most popular test of inter item consistency of reliability is the cronbach’s alpha (cronbach’s alpha; cronbach’s 1946) which is used for multi-point selected items, and the Kuder- Richardson formula (Kuder and Richardson, 1937) was used for dichotomous items. The higher the coefficients, the better the measuring instrument would be reliable when it gives consistent results (Tuckman, 1972, Kothari, 1995).

The reliability of the scores obtained at the two different times from one and the same set of respondents was tested with test - retest method. The test - retest coefficients were 0.90 and 0.94 for scales performance of LPG dealers and other three variables respectively. A very good inter item reliability was identified as the cronbach’s alpha was 0.8510 for each.

## 6. RESULTSAND DISCUSSION

Under this, at first, each independent variable was taken into consideration with the view to examine the degree to which LPG dealers make responses on those variables. Accordingly, in case of intelligence collection the following data were computed.

**Table 2: Intelligence collection**

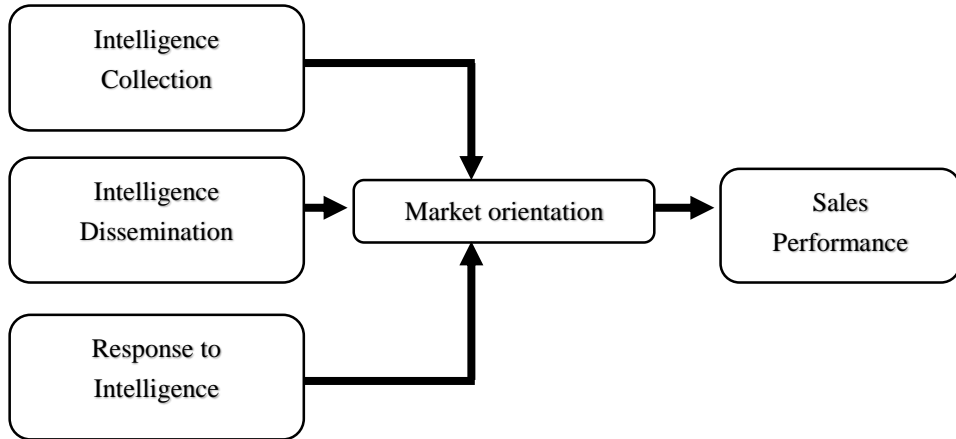
<b>Intelligence collection</b>	<b>Frequency</b>	<b>Percent</b>
Highly collect customer and competitor intelligence	00	00%
Moderately collect customer and competitor intelligence	93	48%
Low collection of customer and competitor intelligence	105	52%
Total	198	100%

Source: Survey Data

As indicated by the above table, it was noted that more LPG dealers do not make an effort to collect intelligence from both customers and competitors. With respect to high category all LPG dealers score zero value which reveals their poor attention paid on intelligence collection. In all respect, considering LPG dealers are in a poor situation in respect of intelligence collection. The following descriptive statistical enumerations demonstrate more information regarding LPG dealer’s poor attempt made to collect intelligence relating to customers and competitors.

#### 4. RESEARCH FRAMEWORK

In building the conceptual framework, major three independent variables namely intelligence collection, intelligence dissemination and response to intelligence and one moderation variable called market orientation were concerned with dependent variable sales performance. Accordingly, following schematic diagram was constructed having taken their interrelationships into account.



Based on the above conceptual framework following hypotheses were formulated.

- H1 - There is a direct relationship between market orientation and sales performance
- H2 - Intelligence collection is positively correlated with sales performance with the influence made by market orientation.
- H3 - Sales performance is positively affected by intelligence dissemination through market orientation.
- H4 - Response to intelligence makes influence on sales performance through market orientation.

Mean values and standard deviations were computed with the aid of five point scale in respect of independent variables used to present data. The respective continuum was worked out by including the range running from strongly agree to strongly disagree. Weightages or values of 5, 4, 3, 2, and 1 were allocated to responses taking direction of the questions into consideration. With regard to 30 questions on operationalizing the extent influence, the following score values are presented.

30 x 5	= 150 satisfactory responses
30 x 4	= 120
30 x 3	= 90 Neutral responses
30 x 2	= 60
30 x 1	= 30 unsatisfactory responses

Unsatisfactory responses lies between 30 and 70, any score between 70 and 110 refer to a mediocre response. Also, scores between 110 and 150 would mean a satisfactory response. Accordingly, other variables were also scaled out along with a continuum.

almost applicable to LPG dealer to achieve higher sales performance. The initial role of LPG dealers in the country is to store and sell LPG refilled cylinders to end- customers. LPG dealers are agents of LPG marketing companies. LPG dealers should be able to supply a variety of related services that can be categorized under customer service or after sales services, which are of paramount significance to build customer loyalty. Thus this study attempted to investigate into the extent to which an appreciable marketing mechanism is practiced by LPG marketing companies and LPG dealers in Sri Lanka.

## 2. METHODOLOGY

As this is empirical in nature a huge attempt was made to collect primary data as much as possible by administering a detailed questionnaire. Before administering questionnaire among total selected sample people, at initial stage a pilot survey was made for the purpose of clarifying the reliability and validity of questionnaire. Having based on the responses made by the respective selected respondents represented in the pilot survey, amended questionnaire was administered among all sample people. Furthermore, additional information were obtained through series of interviews held with the LPG dealers.

The survey was conducted in seven provinces in Sri Lanka. And also, unit of observation was at individual level. The following table shows the distribution of sample selected.

**Table 01: Distribution of sample**

Province	Number of LPG dealers
North central province	36
Eastern province	18
Central province	18
Sabaragamuwa province	36
Uwa province	18
Southern province	36
Western province	36
<b>Total</b>	<b>198</b>

## 3. LIMITATIONS OF THE STUDY

This study was carried out subject to the following limitations.

- Due to the convenience of analysis the study was restricted to a selected sample.
- Certain LPG dealers had a great fear of providing data due to business and official secrecy.
- In administering questionnaire and holding interviews some communication barriers were met.
- Some security problems were met in collecting data from North and Eastern provinces.
- Some LPG dealers very often close their business and new LPG dealers come into operation.
- There is a deviation of understanding some fewer number of ventures.

order to sell the products. Ideally, marketing should result in a customer who is ready to buy on a regular basis. All these marketing characteristics are needed to make a product available. (Peter Drucker, 1973). Felton (1959) has described marketing as a way of thinking and doing business that is based on the integration and co-ordination of all marketing activities which in turn would integrate with the rest of the organization's activities in an effort to maximize organizational profitability.

On the other hand the concept "Micro Marketing" is another similar concept, that refers to the performance of activities seeking to accomplish an organization's objectives by anticipating customer's or client's needs and wants by directing a flow of need – satisfying products from producers to customers or clients. (Maccarthy, E.J. and perreanit, 1987.). In this case heterogeneity in needs and wants arrives business organizations to look for distinctive group of customers with rather homogeneous needs are wants that exist potential market when aggregating (Dibb, 1998). The role of Macro Marketing is to efficiently and effectively match these heterogenous supply and demand and at the same time to accomplish society's objectives. Here especially market orientation is essential. Market orientation refers to the ability of an organization to generate, disseminate and make use of superior information about customer and competitor. (Kohil and Jawarshi, 1990). Another definition is that the coordinated application of inter functional resources to create superior customary value. (Narvaer and Slater, 1989) It has been argued that the adaption of true market orientation requires a synthesis of both and disassociation of both may lead to an erroneous viewpoint. (Avionitis and Gounaris, 1997) Market orientation is all-pervading in marketing (Dawes, 2000 and Workman, 2004, Kirca, 2005, and Jaworski, 1993, Naver and Slater, 1990). Particularly, models concerning market orientation, organization performance relationship and its varied moderators are legion in both marketing and management literature. (Gounaris, 2004, Kauda and Buatsi, 2005). Kholi and Jaworski (1990) defined market orientation as the organization- wide generation of market intelligence pertaining to current and future customer needs, dissemination of intelligence across other departments of the organization and organization- wide responsiveness

Trout and Rics (1985) Perceive market orientation as an effort to compile market intelligence upon the marketing efforts to the competitive advantage of a business organizations. Elliot (1987) adopted a behavioral approach in explaining market orientation from a different view point. He suggested that although the concept market orientation and the philosophy to set a priority to satisfy customer's needs and wants is important. A strategic behavioral approach in explaining the concept of market orientation has found acceptance that is supported by other authors. (Benoma, 1985 and Berioma and Clark, 1992). A market oriented company seeks to put together its entire organization in a unified and consistent system so that the market's environment grasped and the company as a mobilized in order to produce satisfied customers (Kotler, 1997 and Day, 1998) in the hope of achieving customer loyalty and improved market position in long-run (Day, 1998) Market oriented companies require strategic marketing planning in order to develop strong customer relations, customer value and thus, customer. Loyalty (Dalgic, 2000) while remaining focused on serving its targeted markets (Webster, 1994).

In becoming a market oriented paying attention on marketing mix is valuable. This mix was proposed by Chekitan Dev and Don Schultz in the Marketing Management Journal of the American Marketing association and presented by them in market leader the journal of marketing society in U.K. All these concepts and theoretical matters pointed out so far are

## 1. INTRODUCTION

Marketing is the process of planning and executing the concepts, pricing, promotions and distribution of ideas, goods, and services to create exchange that satisfy individuals and organizational goals. (American Marketing Association, Marketing Management, Philip Kotler, 2000 P.8) Another definition is that marketing is both a relationship with a customer base upon a series of transactions, which should result in mutual benefits and a parallel dialogue between marketers and customers which communicates the information necessary to develop the relationship. (David Mercer, 1999, New Marketing practice P.3) Later, Philip Kotler amended his original definition. Accordingly he has defined marketing as a social and managerial process by which individuals and groups satisfy their needs and wants by creating and exchanging products and values with others. (Philip Kotler, Marketing Management, Millennium Edition, P.8) This definition rests on the concept such as target market, market needs and wants exchange of transaction relationship, segmentation, value and satisfaction, networking, marketing channels, supply chain, competitor environment and marketing mix. There are certain marketing concepts namely production concept, product concept, selling concept, marketing concept and societal marketing concept. Production concept is one of the oldest concept. Production concept holds that customer would prefer product that are widely available and inexpensive. (Philip Kotler, 2000, P.17) Product concept holds that customer would favour those products that offer the most innovative, quality and performance features. (Philip Kotler, 2000, P.17) Selling concept holds that consumers would ordinarily not buy enough the organizations show products therefore undertake an aggressive selling and promotion efforts. (Philip Kotler, 2000, P.18) Marketing concept holds that the key to achieving its organizational objectives consists of the company being more effective than competitors in creating delivering and communicating customer value to its chosen target markets (Philip Kotler, 2000, P.19).

Societal marketing concept holds that the desired satisfaction more efficiently and effectively than competitors in a way that preserves or enhances the consumer's and society's wellbeing (Philip Kotler, 2000, P.25) The key assumption underlying the marketing is that, to be successful a company should determine the needs and wants of specific target markets and deliver the desired satisfaction better than competition (Schiff man, G, and Iazer Kanuk, 2004. P.10.). More specifically say, Marketing is a management process that is responsible for identifying, anticipating and satisfying customer with a profile to the organization. (Pater Blood, CIM Annual Report, 1996, P.13.).

Thus, marketing should begin with the production of products as per customer expectation. This involves deciding basic segmentation, targeting, positioning, and designing marketing mix decisions. In this case being marketing oriented is essential due to the fact that it facilitates the customer relationships. Customer relationship is developing into major element of corporate strategy for many organizations, which is also known by the other terms such as relationship marketing or customer relationship management. Customer relationship, management is concerned with creation, development and enhancement of individual relationships with carefully targeted customers and customer groups in order to maximize total customer lifetime value (Ray perry 2001. P.74.).

The concept of marketing orientation is relevant to any organizational scenario as customer is the salient and focal component of any organizational step. Various scholars have identified a number of paths that pave the way for market orientation irrespective of industry types or scale of operations. The aim of marketing is to know and understand the customer well in

# A STUDY ON SALES PERFORMANCE OF LIQUEFIED PETROLEUM GAS DEALERS IN SRI LANKA

Ubayachandra, E. G. and Cooray, N. H. K.

*Department of Marketing Management, Faculty of Commerce & Management Studies,  
University of Kelaniya, Sri Lanka*

## ABSTRACT

*This study is an empirical investigation into the extent to which LPG dealers are market oriented and the degree of their sales performance. For the convenience of analysis, study was restricted to seven provinces namely Central, North Central, Eastern, Southern, Western, Sabaragamuwa and Uva Provinces. With the aid of nonrandom convenience judgment sampling technique which helped to get sample on comparable basis 198 LPG dealers were selected. For collecting data, 198 questionnaires which were received back without rejection were administered among the selected respondents. In reviewing the scores obtained by LPG dealers over five year time period ranging from 2004 to 2008 it seems that the scores obtained by LPG dealers above 100% and between 100%- 80% are less than marks scored between 80%-70% and below 60% as revealed by the annual dealer scorecard evaluation process, 2004-2008. Further it was noted from preliminary data survey that customer expectation has not been satisfactorily fulfilled by the LPG dealers. (A.C. Nelson's Report, 2008). Thus, the central problem of this study was why such poor situation has taken place in this sector. The key objective of this study was to examine the extent to which LPG dealers are market oriented. Specific objectives were to identify the marketing practices of dealers to retain existing customers, to identify the endeavor made by the LPG dealers to attract new customers, to identify how often LPG dealers share customer feed-back and competitor information with staff and to provide a better set of suggestions to get LPG dealer market oriented and to get their sales performance higher. Consistent with these objectives research questions were also raised. They are; what is the degree of market orientation? What is the attempt made to retain existing customers? What is the endeavor made to attract new customers? How often do LPG dealers share customer feed-back and disseminate competitor information with staff? In addition to descriptive statistical tools. Which were used to present data, correlation analysis was employed to test the respective hypotheses. For more clarification SPSS computing software version was associated. Based on the results of discussion it was able to make a conclusion that intelligence collection, intelligent dissemination and response to intelligence highly affect the sales performance subject to the moderation made by market orientation.*

**Keywords:** Intelligence collection, Intelligence dissemination, Response to intelligence, Market orientation, Marketing Mix, Relationship marketing and Market intelligence



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[http://www.unido.org/fileadmin/user\\_media/Publications/Pub\\_free/Women\\_entrepreneurship\\_development\\_in\\_selected\\_African\\_countries.pdf](http://www.unido.org/fileadmin/user_media/Publications/Pub_free/Women_entrepreneurship_development_in_selected_African_countries.pdf) [accessed 13/03/2011].
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mentioned practices are creating opportunities for poor producers, fair trading practices; receipts and payments, ensuring no discrimination and maintaining safe working conditions.

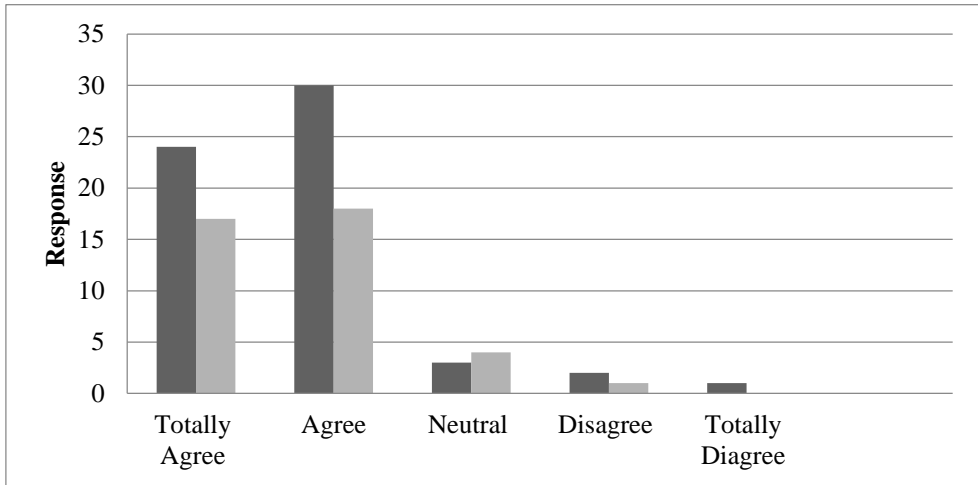
## 5. CONCLUSION

In recent decades, there is an increasing interest in women entrepreneurship development. Governments, policy makers and academics paid a special attention on developing this area particularly in developing countries. This interest has made countries to establish and support women entrepreneurship, especially in rural areas. This resulted to bring local capabilities to the rural economic growth and take them into the self-employment. Most importantly, this concept helped government to eliminate the poverty and create employment opportunities. Women as entrepreneurs are now playing a far role than the introductory stage. They are more educated and well aware of the information. Now they received another challenge to drive the economy to sustainable development. Socially responsible, economically concerned and environment friendly activities in these enterprises reach their own business goals. These businesses focus trading with poor, helping the community to develop skills and abilities, paying fair prices and receiving fair payments, encouraging fair treatment of all staff and encouraging environment-friendly conditions in business operations. These activities are significant in sustainable development of a country. Developing nations must pay their attention further to the women entrepreneurs. The governments of developing nations must be considered how to build Women capacity in business development, including their capability to become productive and innovative entrepreneurs and taking their contribution to the national economy.

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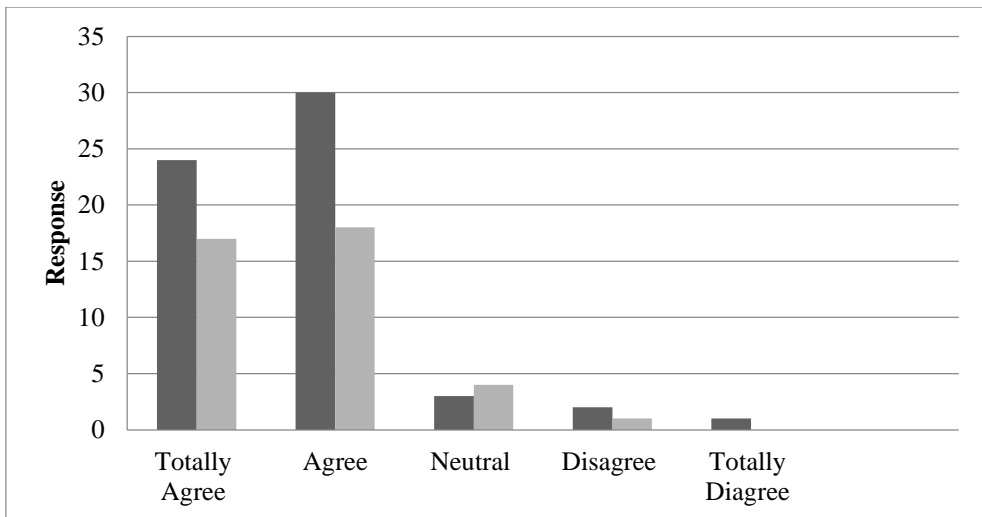
**Figure 17: Frequent participation in social activities and take leadership**



Source: Survey data

According to the Figure 17, two samples have agreed with more than 50% of the women entrepreneurs frequently participate in social activities and take leadership. Social gatherings, charity events, professional development occasions, unions, political party campaigns and events, etc. are the considered social and political activities where women participate and taking leadership roles.

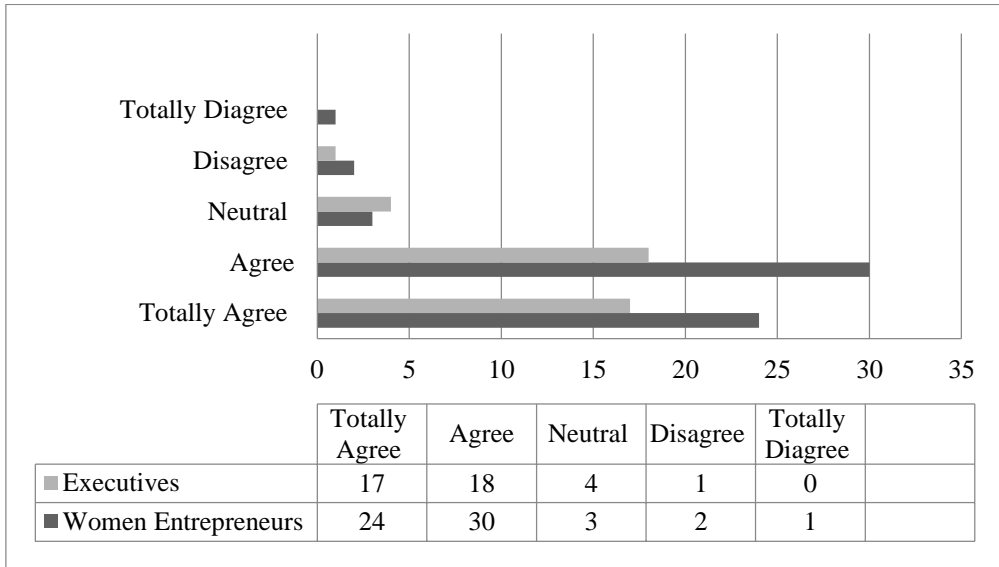
**Figure 18: Women entrepreneurs practice and admire fair trade and fair business operations**



Source: Survey data

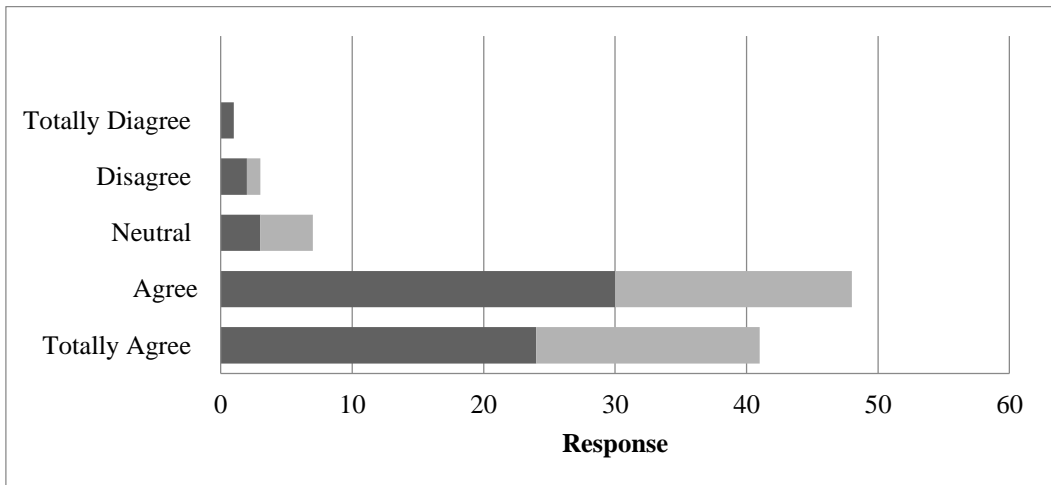
According to the women entrepreneurs who participated in the interview mentioned that they are engaged in fair trade and fair business activities. The Figure 18 shows that is accepted by majority of executives and women entrepreneurs who participated in this survey. Particularly

**Figure 15: Women entrepreneurs promote culture and traditional aspects through business operations**



Source: Survey data

**Figure 16: Women entrepreneurs, equally contribute to the well being of the society**

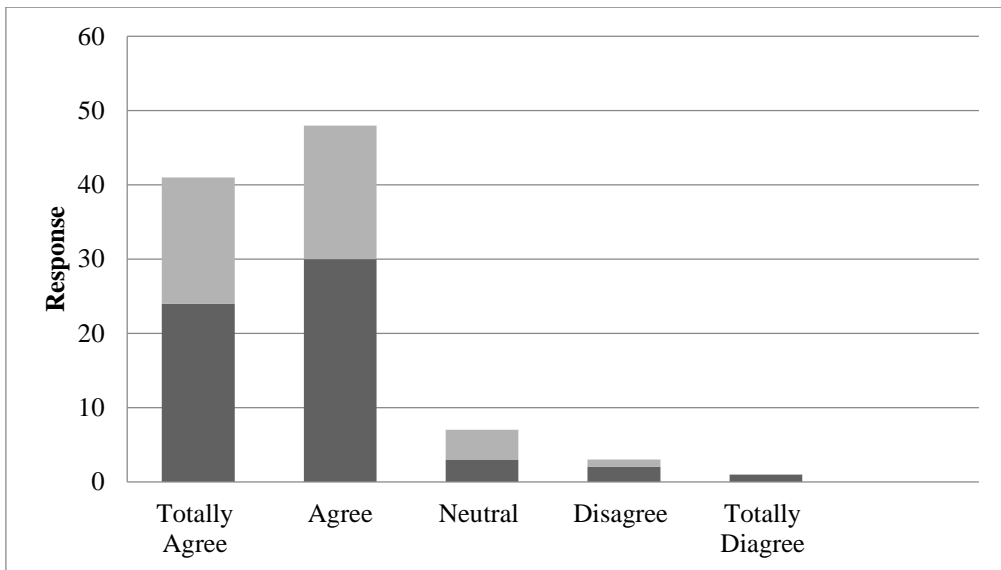


Source: Survey data

Women contribute to the society by playing different roles like housewife, mother, daughter and a good citizen. The role and the responsibility of women entrepreneurs to the society are considerably high as presented by the Figure 16. Women entrepreneurs and executives both have agreed upon the women entrepreneurs contribute to the well being of the society equally like other entrepreneurs.

upon those women entrepreneurs take and face challenges always coming from the external environment. .

**Figure 14: Women entrepreneurs provide useful goods and services to the society**

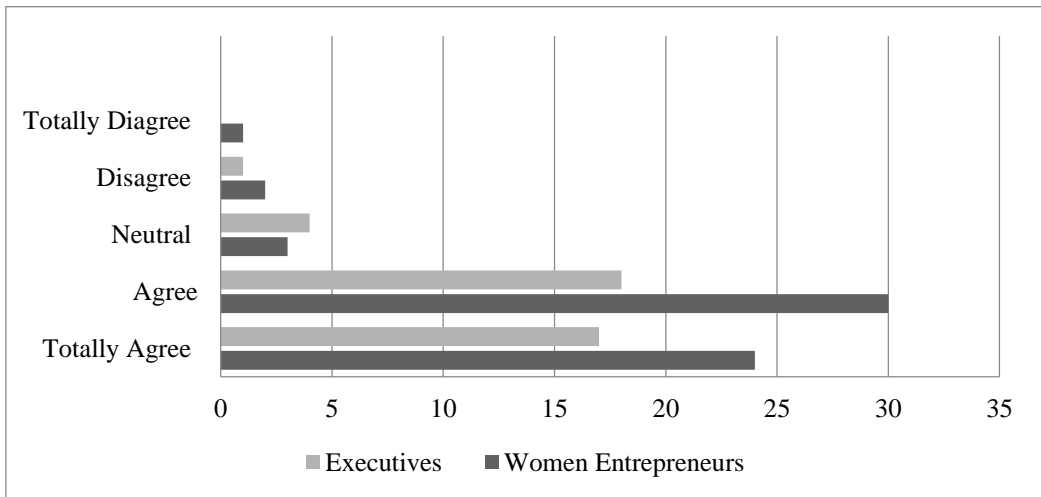


Source: Survey data

Women entrepreneurs find useful business opportunities where make more profits in production of goods and services. Goods and services for day to day life of people are mostly available to women entrepreneurs. However the Figure 14 shows, more than 50% of women entrepreneurs accepted that they find business opportunities of necessary goods and services in the country. Mainly agriculture, clothing, beauty culture, food, etc. are few of main industries where women entrepreneurs run business operations. Sample of executives also averagely agreed on that those women entrepreneurs engage in useful goods and service businesses. According to them, it is necessary to have businesses which provide useful goods and services when the country establishing sustainable development.

According to the Figure 15, most women entrepreneurs and executives in two samples have agreed upon the women entrepreneurs promote culture and traditional aspects through business operations. Women always try to be inline their activities with cultural and traditional aspects. Women play a key role in practicing cultural aspects and tradition specifically in developing nations. Women entrepreneurs who have responded to this study exclusively mentioned that they apply and use traditional methods of productions, for example, indigenous agricultural methods to protect nutrition and freshness of vegetables.

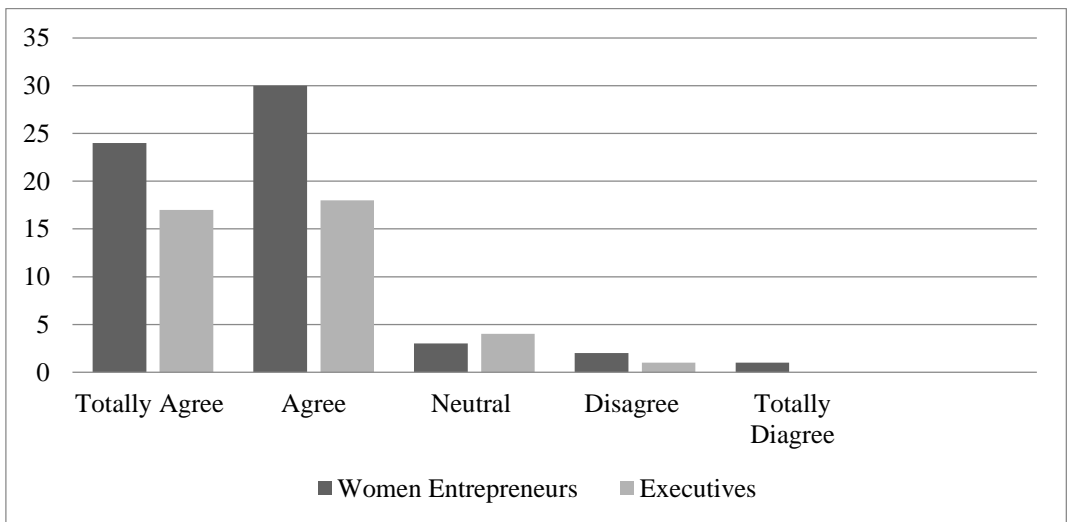
**Figure 12: Women entrepreneurs are financially independent**



Source: Survey data

#### 4.1 Women Entrepreneurs in Social development

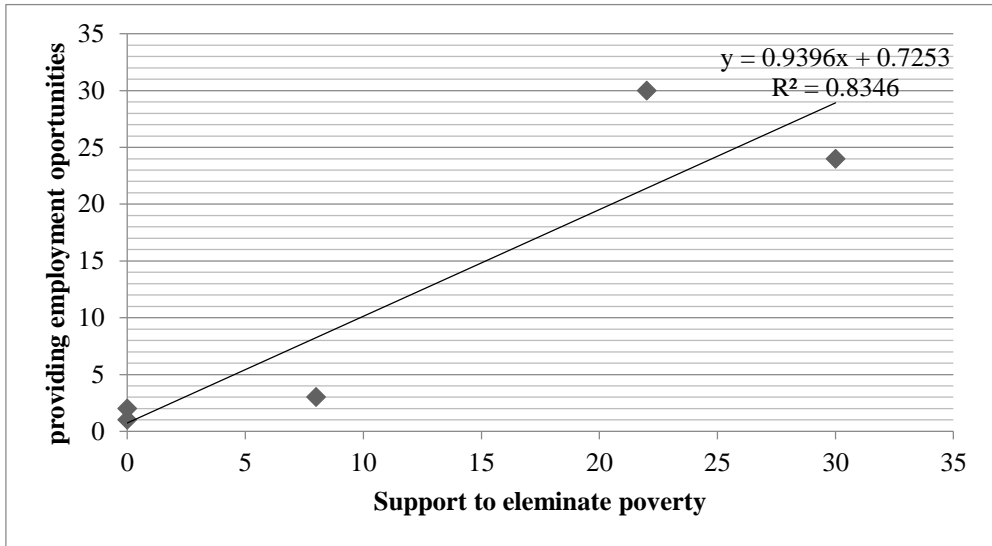
**Figure 13: Women entrepreneurs are social examples of facing challenges**



Source: Survey data

It is a highly considerable thing in economic development is women and their employment. Women are the main character in the family who manage the well being of the family. Men earn and women manage it in order to fulfil the requirements of the family. Women receive many challenges in a developing country. It is not easy to manage and survive. It is significant that managing a business by paying the attention to the development of the family is challengeable. But women entrepreneurs have overcome it. At present in the Figure 13, the majority of women entrepreneurs and executives who participated in this survey have agreed

**Figure 11: Correlation between eliminating poverty and providing employment opportunities**

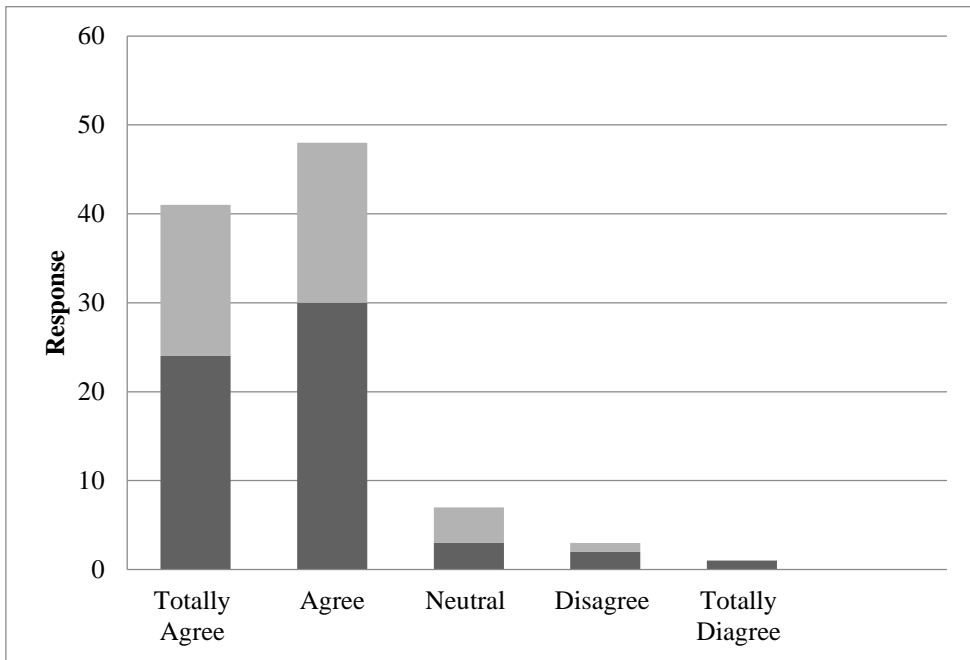


Source: Survey data

As Figure 11 presents, there is a positive partial, but strong relationship between women's entrepreneurs' activities to eliminate the poverty and the employment opportunities created by the actions of women entrepreneurs. This is significant, especially for a sustainability driven economy.

Women in businesses worldwide have created independent women. It is very common in developing countries in Africa, mainly women run businesses support them to feed their whole family. Social issues like, domestic violence, prostitution also can be eradicated if the women can become independent financially by running a business. According to the Figure 12, the majority of women entrepreneurs and executive in two samples agreed upon that the women entrepreneurs become financially independent.

**Figure 10: Women entrepreneurs provide employment opportunities to the society**

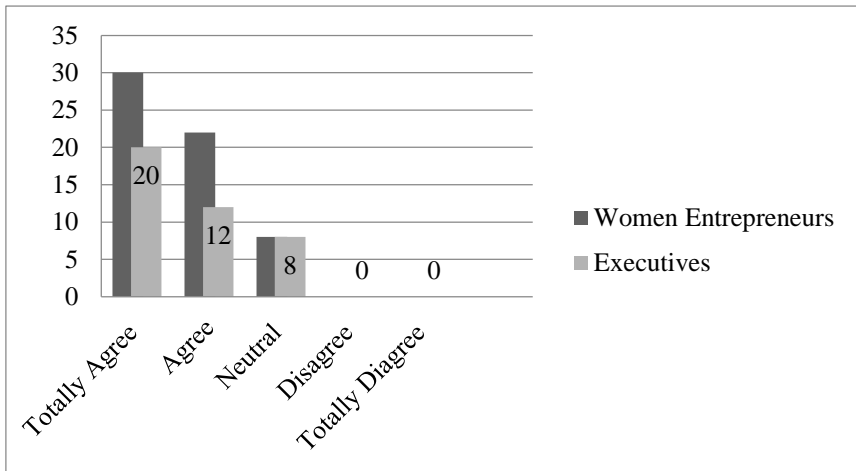


As shown in the Figure 10, providing employment opportunities is one important factor of why a developing nation wants more women entrepreneurs. However, women entrepreneurs in the sample and the executives of the participations stated that the majority of women is supporting society and the country's economy by offering goods and services and offering employment opportunities. Providing employment opportunity is helpful in eliminating the poverty.



#### 4.2 Women entrepreneurs in Economic development

**Figure 09: Women Entrepreneurs support to eliminate the poverty**

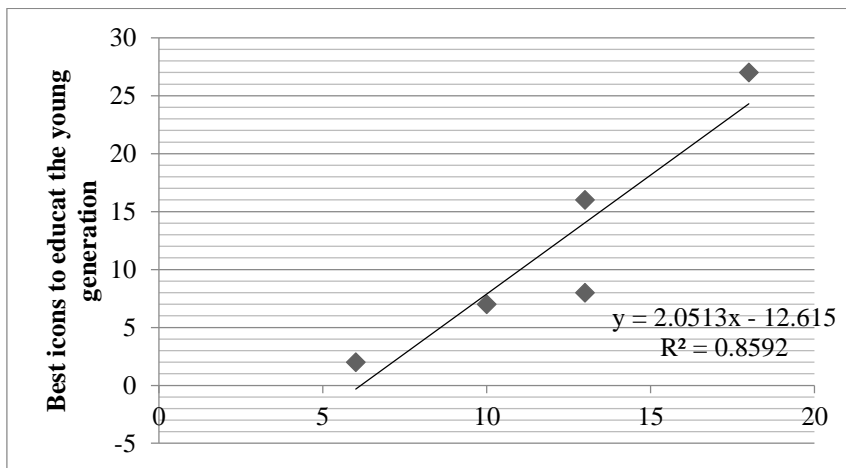


The majority of women entrepreneurs in the sample were agreed upon that they contribute to eliminate the poverty. They earn for themselves and the family, therefore the family can fulfil all the necessary requirements and in such families the burden of earning is not 100% responsibility of men. On the other hand, entrepreneurship helps women to use their abilities and skills in a maximum capacity, while obtaining the self satisfaction. As in the Figure 9, more that 50% executives also agreed that women run businesses contribute to eliminate the poverty of a country.

results showed in the Figure 6 clearly. However, becoming a philanthropist is not an easy a task in a developing country.

It is required that the young generation of a country should be aware and educated on best suitable business practices. Women entrepreneurs who have been adopting green activities into business practices and testing them on production and services also can take this job. According to the Figure 7, more than 60% of women entrepreneurs and more than 50% of executives agree upon the women entrepreneurs are suitable icons to educate the younger generation about good business practices.

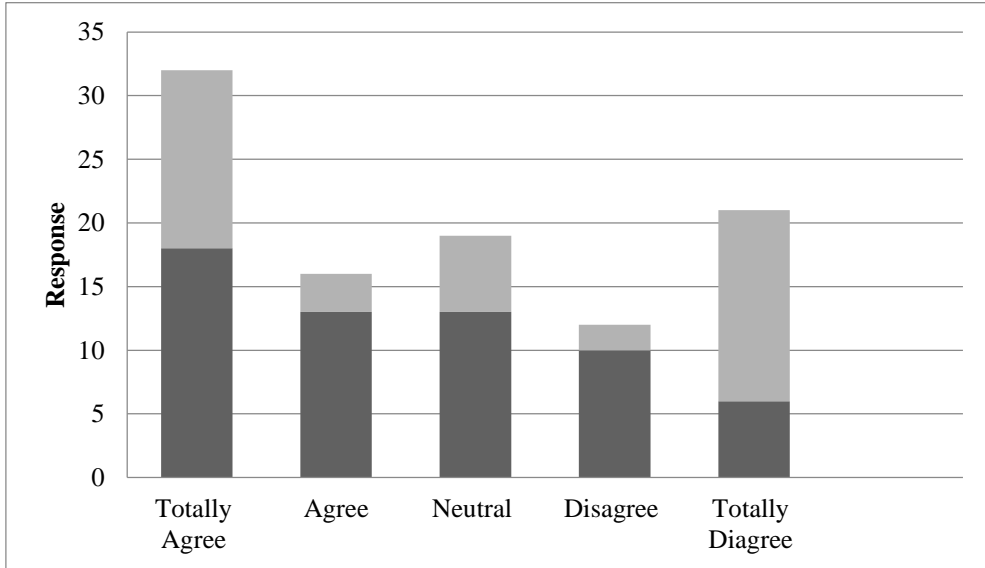
**Figure 8: The correlation between becoming a philanthropist and being a social icon the educate the younger generation**



Source: Survey data

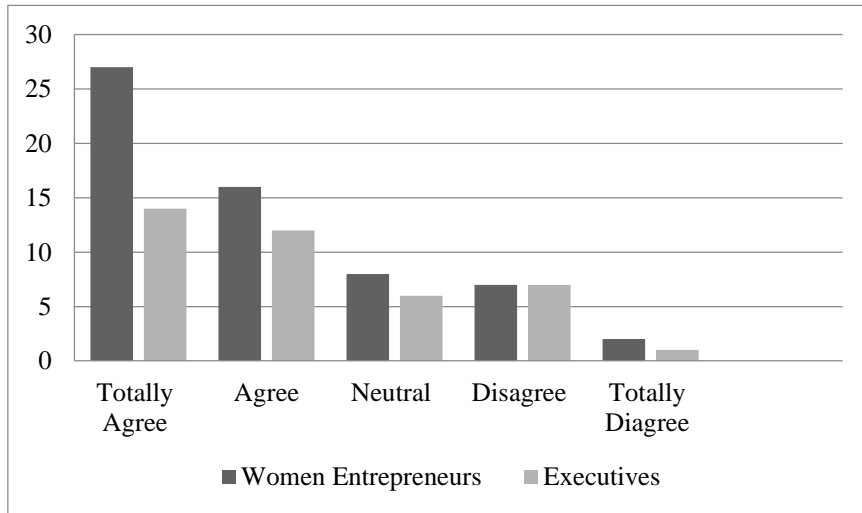
Figure 8 presents the relationship between becoming a philanthropist and being an icon to educate the younger generation of a country. There is a position strong positive partial relationship between them. Therefore, Women Entrepreneurs can be icons to educate the young will result them to become philanthropists in the future.

**Figure 6: Most women entrepreneurs become philanthropists**



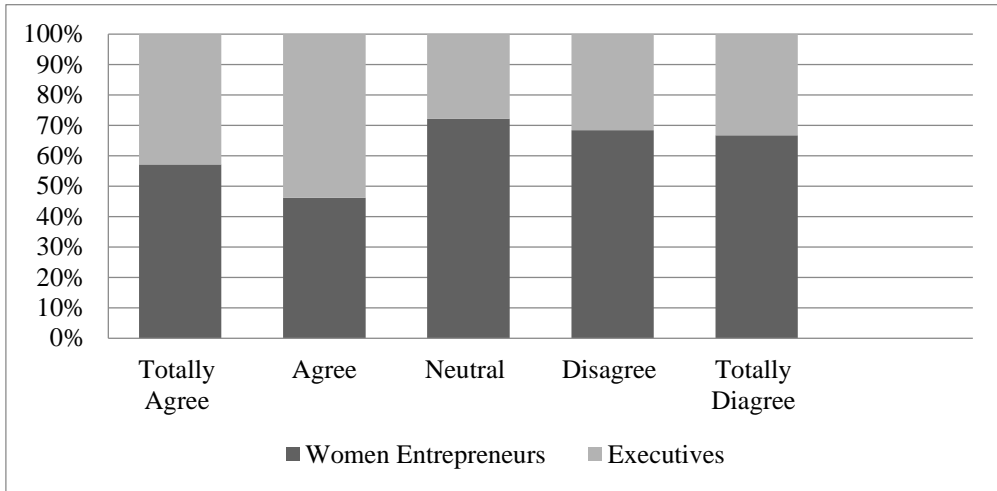
Source: Survey data

**Figure 07: Women Entrepreneurs are best Icons to promote green education to younger generation**



It is dispassionate to prove that most women entrepreneurs become philanthropists later to serve the society well according to the responses of executives. This is difficult to apply in developing countries. Some women continue their businesses while pay more attention to ecological and charitable activities. Some minor scenarios were found that women completely left or sold out the business to become a philanthropist. However the women entrepreneurs in this sample still believe that they can become philanthropists later and the

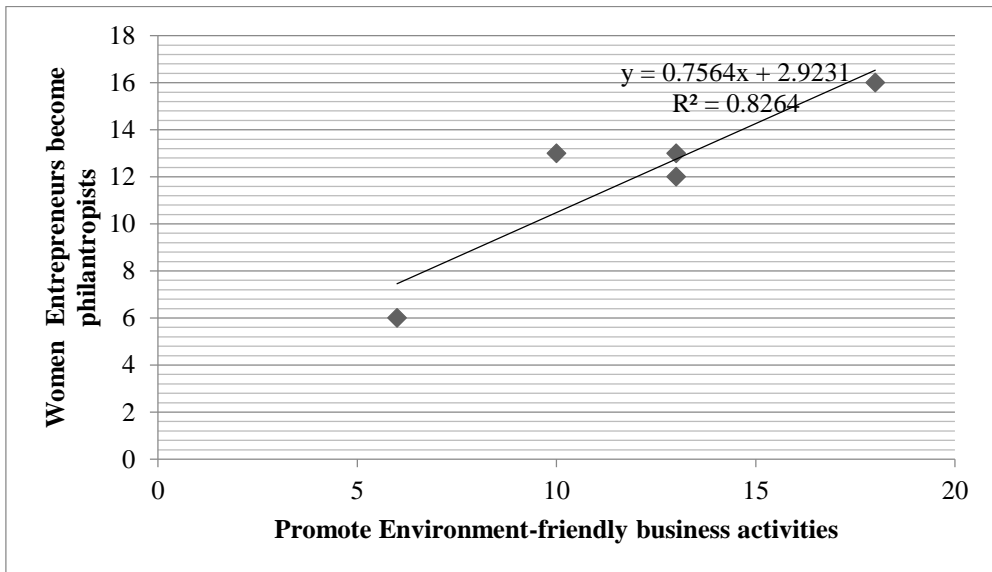
**Figure 4: Application of green practices in production and services**



Source: Survey data

The Figure 5 presents the correlation between environment-friendly practices in business activities and promoting green activities in production and services. There is a positive, strong partial correlation between these two variables. Therefore, women entrepreneurs who apply environment-friendly activities in business practices can be considered as green promoters.

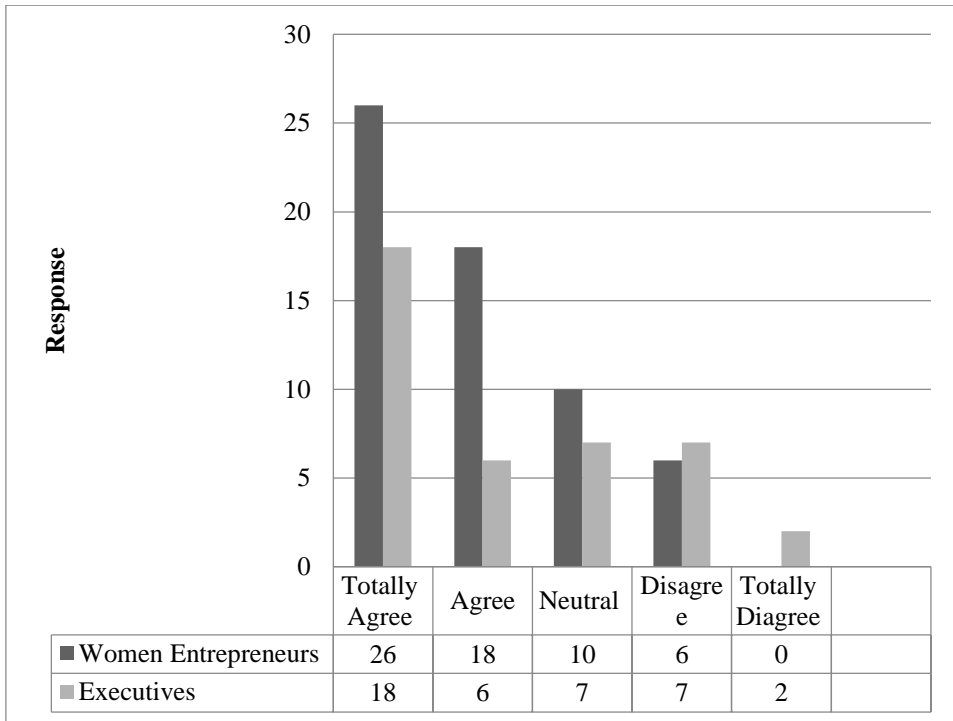
**Figure 5: Correlation between promoting green activities in production and services and taking environment-friendly practices in business activities**



Source: Survey data

friendly business activities of women entrepreneurs. According to them, women' inborn ability of neatness and carefulness are they significant reasons for this occurrence.

**Figure 3: Environment-friendly activities in business operations**



Source: Survey data

Women entrepreneurs are well promoted green practices and applications in productions and services. It is clearly stated in the Figure 4, more than 50% of women entrepreneurs accept that they have been adopted green applications in production and services. And they promote green practices in marketing, advertising, staffing etc. The access to information have been made them to understand how important these things in business. Activities of Non-governmental organizations became prominent in creating awareness of green practices to emerging businesses. Sample of executives also agree upon the statement and proved that women entrepreneurs are green promoter in production and services. According the executives, this is a unique area that women in business developed which they can use to compete in the market place.

**Table 111: Sample Proportion**

<b>Name of the sample</b>	<b>Proportion</b>	<b>No. of participants</b>
Women entrepreneurs	Sri Lanka - 30 India - 15 Maldives - 10 Nigeria – 05	60
Executives	Private sector – 25 Public sector - 15	40

Source: Developed by the researcher

An empirical survey was designed with two sets as to study the views and experiences of women entrepreneurs who are using Facebook, emails and google+ sites by using ‘Snowball sampling’ method since questionnaires were distributed among the above social media network communities and friends living in selected countries. Secondly, informal interviews were conducted with some women entrepreneurs in order to study the challenges, opportunities and practical applicability of women entrepreneurship. There were 60 women entrepreneurs and 40 executives participated in this study. The convenience sampling method was used in the second set to obtain more scientific result that could be used to represent the entire population. Therefore the sample was selected from the sampling frame which was given by selecting public and private sector organizations. Women entrepreneurship has the influence of controllable variables such as being a philanthropist and environmental friendliness, intention of eliminating poverty and support employment, intention to be financially independent, inborn talents and abilities and non controllable variables such as culture, tradition, economic growth and country’s SME policy. Later, the above mentioned poverty elimination and employment development, becoming a philanthropist by practicing green activities in business operations have evaluated and the correlation was measured between the each of them. Research data analysis was conducted in the methods of univariate analysis, such as frequency tables, diagrams, correlation and measures of dispersion.

## **6. FINDINGS**

This study obtained data from 100 participants with a questionnaire based survey. 20 of them participated in interviews to provide unstructured facts.

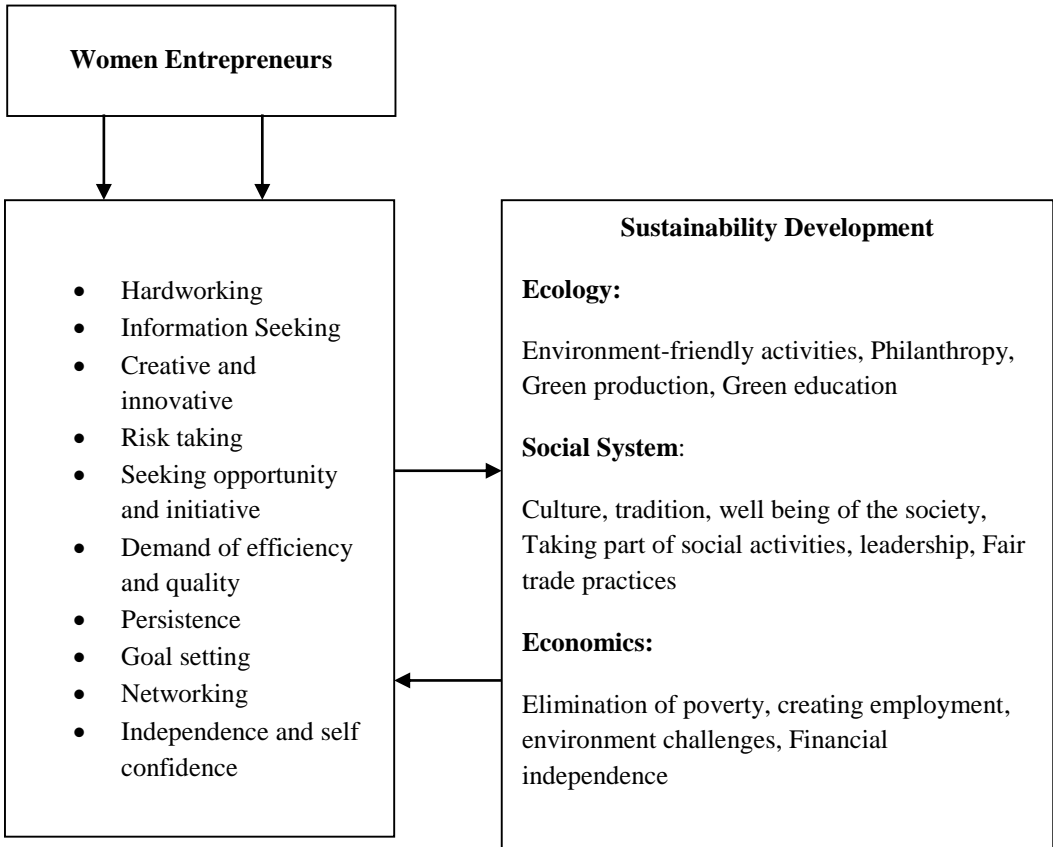
### **6.1. Women Entrepreneurs in Ecological development**

The above data in Figure 3 demonstrated those women’s entrepreneurs’ engagement with environment-friendly activities in business operations. More than 50% women entrepreneurs agreed that they run businesses with minimizing the bad effects to the environment. Many of them stated that disposal and waste management key areas they mainly concern and there is an extra income that they can generate by practicing waste management and proper disposal practices. The sample of executives gives more than 50% consensus to prove environment-

also result to reduce the number of hungry people in the world by up to 150 million people (The World Economic Forum Gender Gap Report and the Food of United Nations 2014).

#### 4. CONCEPTUAL FRAMEWORK

Figure 2: Conceptual framework

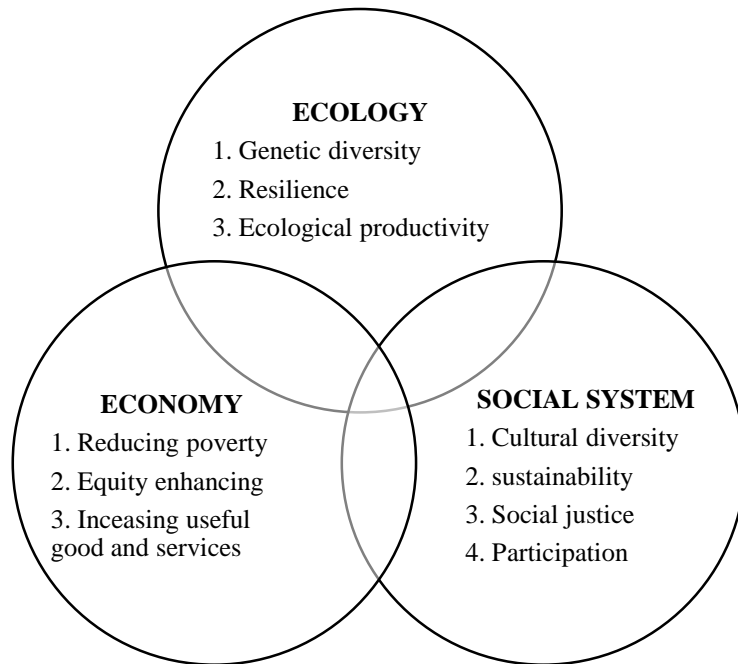


Source: Developed by the researcher

#### 5. METHODOLOGY

This study is to examine the role of women entrepreneurs in establishing a sustainable development in developing nations. Therefore, sixty (60) women entrepreneurs representing four developing countries and forty (40) executives of private and public sector companies were selected to conduct this study.

**Figure 1: Objectives of sustainable development**



Source: Beyond Economic Growth: An Introduction to Sustainable Development

Whilst many of the early contributions to defining sustainable development came from the disciplines of economics and ecology, it is the third sphere that has accommodated much recent work. For Starkey and Walford (2001), for example, sustainable development is a moral concept that seeks to define a ‘fair and just’ development. They suggest that since the environment is the basis of all economic activity and of life itself, ‘it is surely only right that the quality and integrity of the environment be maintained for future generations’ Notions of ‘environmental justice’ are now a prominent part of contemporary discussions of the meaning and practice of sustainable development and take the moral concerns further: in addition to environmental protection, the concern is for how environmental hazards (such as pollution) and goods (such as access to green space) are distributed across society. Environmental justice also encompasses a concern for the equity of environmental management interventions and the nature of public involvement in decision-making. Understanding is mounting of the political nature of sustainable development in practice; how the solutions proposed and the choices and trade-offs made can carry different costs for different groups of people.

Women own nearly 8 million businesses in the United States accounting for \$ 1.2 trillion of GDP. Women tend to spend more of their earned income than men on the health and education of their families. In the United States, women went from holding 37% of all jobs to nearly 48% over the past forty years. Some statistics showed that the reductions in barriers to female labour force participation would increase the size of GDP such as USA 9%, Europe 13% and Japan 16%. The reduction in barriers to women’s equal access to productive resources could raise total agricultural output in developing countries by 2.5% to 4%. It will



## 2. LITERATURE REVIEW

Entrepreneurship is a dynamic process of vision, change, and creation. It requires an application of energy and passion towards the creation and implementation of new ideas and creative solutions. The essential ingredients include the willingness to take calculated risks in terms of time, equity, or career; the ability to formulate an effective venture team; the creative skill to marshal needed resources; the fundamental skill of building a solid business plan; and, finally, the vision to recognize opportunity where others see chaos, contradiction, and confusion. Many business entrepreneurs around the world have exploited the environment with impunity, without any thought of sustainability. Entrepreneurs seek growth and profits within the business world. They are constant innovators and always are trying to capture larger market shares in the competitive marketplace. They are pioneering individualists who create one venture after another and one innovation after another (Frederick and Kuratko 2010).

As Birley, S, & Harris.P (1988) say to analyze the factors which influence the initial entrepreneurial decision is used to develop a theory for female entrepreneurs. The model describes three broad groups: (a. "Antecedent Influences" include those aspects of the entrepreneurs' background which affect her motivations, perceptions, and skills and knowledge. They include genetic factors, family influences, education, and previous career experiences. (b. The "Incubator Organization" describes the nature of the organization for which the entrepreneur worked immediately prior to start-up. Relevant factors include the specific geographic location, the type of the skills and knowledge acquired the degree of contact with possible fellow founders, and the extent to which the entrepreneur gains experience of a small business setting. Beyond these, there are the particular motivations and triggers to stay with or to leave the organization - the push versus pull factors. (c. "Environmental Factors" external to the individual and to her incubator organizations provide an important setting within which the individual entrepreneur is able to flourish. Important factors here include the general prevailing economic conditions, but more specifically the accessibility and availability of venture capital, role models of successful entrepreneurs, and the availability of supporting services.

According to the classical definition given by the United Nations World Commission on Environment and Development in 1987, development is sustainable if it "meets the needs of the present without compromising the ability of future generations to meet their own needs." It is usually understood that this "intergenerational" equity would be impossible to achieve in the absence of present-day social equity, if the economic activities of some groups of people continue to jeopardize the well-being of people belonging to other groups or living in other parts of the world.

In the last few decades, the attitudes of people have been changed and women entrepreneurs are considered as significant in economic development and wealth creation. Women entrepreneurs also recognized as social icons to motivate women in developing countries. Women's significant number of the businesses and their productive activities, particularly in the industry makes them a force to be reckoned with and empower them in the overall economic development of their nations. Whether they are involved in small or medium scale production activities, or in the informal sectors, women's entrepreneurial activities are not only a means for economic survival, but also have positive social repercussions for the women themselves and their social environment (UNIDO 2001).

In the last couple of decades, there has been a change in attitude and entrepreneurs are considered to be important in relation to both wealth creation and economic regeneration. Indeed, the role and importance of female entrepreneurship and new business creation to both developed and developing economies have received increased attention from academics and policy makers in recent years. This growth in interest in the economic contribution of entrepreneurship has been reflected in an increased level and variety of public and private sector policy initiatives at local, regional and national levels to stimulate and support of the development of the sector (Henry. et al 2003). In this case, women entrepreneurs were given many opportunities in starting new businesses and supports internationally. Female-run enterprises are steadily growing all over the world, contributing to household incomes and growth of national economies. However, women face time, human, physical, and social constraints that limit their ability to grow their businesses. Women's development is directly related to the nation's development. Therefore, sustainable development of women's resources, their abilities, interests, skills and other potentialities are of paramount importance needs of this sector. Women Entrepreneurship responds to increasing demands for best practices and tools to integrate gender in private sector development.

In view of the growing importance of entrepreneurship- oriented development assistance and in response to the fact that about 40% of enterprises in developing countries are owned and run by women (Zororo 2011). Observation and empirical evidence point to and reveal that the relationship between women entrepreneurship and the sustainable development. An entrepreneur offers some new value(s) to the society sometimes in the form of innovative or novel things through the creation of a firm. Women entrepreneurship is a potential means of empowering people, developing rural women and solving other social problems. Women entrepreneurs can be positioned to play an important role in promoting sustainable practices in economics, social system and ecology, to result a sustainable development. This research aims to study the role of women entrepreneurs in sustainable development by concerning the adaptations of social, economical and environmental practices in business operations. Followings are the sub objectives,

1. To examine the impact of the activities of women entrepreneurs on the economy of developing countries.
2. To determine the effect(s) of activities of women entrepreneurs on the culture of their own.
3. To ascertain the impact of women entrepreneurs activities to protect the eco-system of developing countries.

# THE ROLE OF WOMEN ENTREPRENEURS IN ESTABLISHING A SUSTAINABLE DEVELOPMENT IN SRI LANKA

Ambepitiya, K.R.

*Department of Management and Finance, General Sir John Kotelawala Defence University, Sri Lanka*

## **Abstract**

*Woman has become a significant role in the economic development of any country. They contribute and support the economy extensively in different ways of being employed in different sectors. There are many women running successful businesses and some of them are very successful with entrepreneurial skills. It is a known fact that now many successful and world's enormous enterprises are owned and run by women. Many of them are actual or potential owners of trademarks, service marks, trade name as well as of industrial designs, patents and copyright. In developing countries some women are running small enterprises and many cooperatives that are proving so successful. Women entrepreneurs in both developed and developing countries are, socially powerful in education and making a positive impact to the society. It is important to study how women in business and their skills can be utilized in order to achieve a sustainable economy for Sri Lanka. The objectives of this study have scattered in the study of women entrepreneurs to a sustainable economy, social system, and ecology. A descriptive research methodology is used for this study and administered to a selected sample from a specific population included with women in businesses and executives who are from private and public sector offices. The study consists of six month duration which uses a questionnaire as the survey instrument. Using the survey, it has resulted significantly the women entrepreneurs can be positioned to play an important role in promoting sustainable practices in economics, social system and ecology, to result a sustainable development. The researcher concludes the study by observing the positive effect on the economy and the development, the Women entrepreneurship is a key to the developing world to promote sustainable practices in business.*

**Keywords:** Entrepreneurship, Sustainable development, Women in business, Economy, Development

## **1. INTRODUCTION**

In the 1970s, women left home and entered the workforce in droves, women today is leaving the workforce in droves in favour of being at home. But unlike generations of women before, these women are opting to work in the home not as homemakers, but as job-making entrepreneurs. Many women start businesses that align with personal values and offers freedom and flexibility when it comes to things like scheduling. "The glass ceiling that once limited a woman's career path has paved a new road towards business ownership, where women can utilize their sharp business acumen while building strong family ties (Forbs 2012). The development of women is an integrated and unified concept, stretching across economic, social and cultural fields (Mehta and Sethi 1997). Women participation has been considered as a significant factor in economic and social development. However, they are reasonably unexploited as a source of Entrepreneurship in both developing and developed countries. This is a true fact principally in areas of new business creations (Brush 1994).

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be increased. Then, we will have to think of the strategies for achieving this requirement. The way forward is to initiate an effective policy meditation to promote entrepreneurs. Through promoting entrepreneurship, employees from the public sector and the private sector can be transferred to the employers sector on one hand and, on the other hand, the self-employed also can be transferred to the employer sector once they become successful entrepreneurs. In addition, through paying more attention to entrepreneurship education at schools and higher education institutions, mostly the youths can be motivated to enter the employer sector rather than encouraging them to compete for existing inadequate jobs available in the public sector and the private sector as currently done. There are a large number of persons who prematurely get retired from their public or private sector jobs. Also, every year a considerable number of persons come back to the country after ending their foreign job assignments with earned funds with them. Majority of the persons in these segments opt for starting their own business. Further, innovations can be promoted from the school levels and those show competencies can be enticed to become successful entrepreneurs guiding and providing them with necessary requirements and facilities. Sri Lanka is considered a difficult country to be an inventor in. Inventors do not receive much recognition for their creations, and that is why most inventors end up selling their patents to foreign companies. Also, support from the government and politicians was limited as there is not much public interest in poor inventors who do not have the capital to turn their ideas into marketable products (Karunaratna as appeared in Gunatilake, 2015). As such, currently, we do not find any formal arrangement to capture these segments and promote them for becoming successful entrepreneurs. If policy formulation is made to cover these areas and implementing them successfully the economy definitely can increase the size of the employers' column represented by the data highlighted by the table of Status of Employment.

#### **4. CONCLUSION**

Sri Lanka too as many other countries has committed to promote entrepreneurship in formulating its development policies, and already taken a number of steps for creating more entrepreneurs to acquire a rapid increase in employment generation, income creation and poverty alleviation. However, in most of the deliberations, the need of the entrepreneurial development is still discussed theoretically without reviewing the success so far achieved by entrepreneurial promotional programmes based on the relevant data in the economy. Analysis of economy wide status of employment data through this study shows that economy's formal sectors have failed to generate sufficient amount of employment especially for the educated youths, and as a whole more people have shifted to the informal sector for finding work and income. But this latter sector (family support sector + self-employed sector) too does not show a considerable expansion irrespective of having a number of major entrepreneurial promotional programmes functioning in the country for a long period. As a result, employers sector of the economy has not expanded over time beyond 3% of the workforce which can be identified as the major constraint for not generating sufficient employment in the economy. Having understood this phenomenon the paper emphasizes the importance of attracting more people from other sectors (public, private, family support and self-employed sectors) of the employment structure to employers sector through promoting entrepreneurial abilities of people. For this purpose, the paper suggests a more elaborative ways and means for increasing the size of the volume of employers or successful entrepreneurs to acquire a rapid increase in employment generation, income creation and poverty alleviation for the economy.

**Table 03: Output-Employment Gap in 2012**

2012	Agriculture	Industry	Service	GDP
Growth (%)	+ 5.8	+ 10.3	+ 4.6	+ 6.4
Employment (%)	- 7.5	+ 7.2	- 0.6	-0.8

Source: CBSL, 2012

When exodus of labour to foreign countries for finding jobs is considered, over the past ten years (2002-2012), on average, a quarter of a million Sri Lankans have left annually for overseas employment, with the number increasing every year. As such, total stock of Sri Lankan overseas contract migration workers has reached 2 million by 2011, amounting to over 14% of the total working-age population of the economy (ibid, 2012). Some other reasons also have contributed to reducing job generation and falling unemployment at the same time. Only those who are 'looking for work' is counted in labour force. Some people get fed up and stop looking for jobs for the reason that they have lost hope after continuously trying for formal sector jobs for a number of years, and with that also unemployment can reduce (Sandaratna, 2012). Another reason might be fast demographic transition and its effect on reducing unemployment (Patabendige, 2006). On account of these facts, one can argue that open unemployment ratio around 4% of the labour force in recent years does not show the rigor of the educated youths' unemployment problem which is comparatively nearly twice (7.5) of that of open unemployment (4%) as shown by the following data.

**Table 04: Unemployment by Educational Level (2012)**

Below Grade 5-9 / Year 6-10	3.4
GCE (O/L)	5.9
GCE (A/L) and above (graduates)	8.6

Source: (CBSL, 2013)

On the other hand, when the duration associated with the unemployed is concerned long-term unemployment is most conspicuous among those who have obtained higher educational qualifications, and, also compared with 2012 data, GCE (A/L) and above (graduates) unemployment percentage has increased from 7.5% to 8.6% in 2013. Also, according to Senerath (2011) among those who have graduated in the discipline of Commerce and Management between 2005-2010, only 54% of the graduates are doing jobs which are consistent with their level of education. Others are doing jobs which are not matched to their level of education. These evidences show that actual unemployment problem among the youths with higher education are more severe than indicated by the Central Bank data on unemployment, and this trend is mainly because of retardation of employment creation especially in the formal economy as shown above. Having understood the trend of increasing unemployment, particularly among the educated youths, we have to examine ways and means to reduce it. Data analysis of the Table -2 indicates that employer's column data varies between 2% to 3% over the years indicating that a number of employers in the economy was comparatively lower and inadequate to increase national output and generate new employment. This employer sector, mainly can be considered as the sector which comprises of all successful entrepreneurs so far economy is having, and, in that sense, if this sector's size can be increased the country's economic output / income and employment creation can

Year	Public sector employees	Private sector employees	Employers	Self employed	Unpaid family workers	Total salaried employees	Total non-salaried persons
2007	13.8	42.7	2.8	30.4	10.5	56.5	43.7
2009	15.5	42.1	2.8	30.4	10.6	57.6	43.8
2011	14.4	40.5	2.9	31.5	10.8	57.8	42.2
2013	15.1	40.6	3.0	32.2	9.1	58.7	41.3

Source: Annual Report (various); Central Bank and the researcher's calculation

Accordingly, only between 2% to 3% of successful entrepreneurs or employers can be seen in the economy as a whole. The status of employment data published by the Central Bank of Sri Lanka clearly depicts absorption of labour by various sectors of the economy such as public sector, private sector, employers sector, self-employed sector and unpaid family workers sector in the economy. Based on these sectors' employment absorption, economy can be divided into two major sectors such as the formal economy and the informal economy. If the formal economy is expanding it is much better than expanding the informal economy. Those employed by the formal economy are monthly salaried people with more stable and higher income, and as a result, they are enjoying a higher standard of living. Conversely, those in the informal economy do not receive stable income such as monthly salaries, and their income is irregular and lesser than that of their counterparts in the formal economy, and as a result, their standard of living is also much lower having an increasing poverty. As shown by the description by the above table, formal economy constitutes of the public sector + private sector + employers while the informal economy represents by the self-employed sector + unpaid family workers sector. In 1991, the formal sector of the economy had provided 64.4 % of employment while it has reduced to 58.7 % of the workforce by the end of the year 2013 while the informal sector's share has increased from 35.6% to 41.3% in the corresponding period. This trend indicates that the labour market situation has deteriorated during this period, suggesting that economy is not strong enough to generate new jobs in the formal sector of the economy although the Central Bank data shows that the rate of open unemployment has been continuously reducing during this period. This proves the fact that unemployment has reduced not because of increasing the formal economy's job creation ability, but because of shifting the unemployed themselves to the informal sector as explained above or migrating for foreign jobs mostly. This fact is further substantiated by experiencing an increasing trend in output-employment gap in the economy or having a jobless growth, especially in the formal economy as shown by the following data.

In this background, it is necessary to investigate the reasons for this unrealistic behavior of having reduced unemployment while employment generation, particularly in the formal economy shows retardation. Researchers identify that exodus of labour to finding foreign jobs as one of the major reasons for appearing such a phenomenon (Athukorala, 2013).

Societies, Samurdhi Entrepreneurship Credit Scheme for the Self-employed, Samurdhi Marketing Development Programme, Community Development Projects, Human Resources Development Programme and Sumurdhi Social Security Programme have been set up. Apart from that, in the banking sector also, now, more prominent place is given to funds channeling to reduce poverty. Poverty Alleviation Micro Finance Project – II of the Central Bank can be cited as an example. This line of activity has become a prominent area in commercial banks as well. For example, Chairman of MBSL has recently declared that Bank will focus more on giving micro credit to the sectors of small industries, entrepreneur development and agriculture. In the recently held HSBC bank’s Youth Enterprise Awards Ceremony, each winner and runner-up of business plan contest were awarded seed capital of Rs. 1, 00,000 to help them to establish their own enterprises. In this setting, it is generally agreed that entrepreneurship should be encouraged as a necessary step for stimulating employment generation, poverty alleviation, and increasing economic growth.

### 3. Analysis of Status of Employment Data

Now, universities also have come forward to organize entrepreneurship degree programmes with the purpose of generating employment faster. In this scenario, rather than competing for few existing jobs undergraduates are encouraged to come forward and be prepared to starting up new ventures of their own and providing jobs not only for them but also for others. Anecdotal evidence shows that our education system has failed to motivate students becoming entrepreneurs. Whatever level they are studying whether at upper school level or university undergraduate or postgraduate levels, for example, in a given class consisting of 50 students, if they are asked about their willingness to start up their own business only one or two students are ready to do so. Almost 98% of students expect joining the existing organizations and business ventures as employees of different grades once they finish their education, and only about 2% to 3% of students are prepared to be entrepreneurs. This willingness of the percentage of students is consistent with the national level data as highlighted by the data in the employer column in the status of employment table (See Table – 2).

**Table 02: Status of Employment**

Year	Public sector employees	Private sector employees	Employers	Self employed	Unpaid family workers	Total salaried employees	Total non-salaried persons
1991	22.9	39.5	2.2	25.4	10.0	62.4	37.6
1993	17.4	42.8	2.0	27.4	10.4	60.2	39.8
1995	15.6	44.3	2.5	28.3	9.4	59.9	40.1
1997	15.2	44.0	2.4	29.1	9.3	59.2	40.8
1999	14.4	43.1	2.0	28.3	12.2	57.5	42.5
2001	13.8	44.8	2.3	28.5	10.6	58.6	41.4
2003	13.6	43.9	2.7	29.7	10.7	57.5	42.5
2005	13.2	46.2	2.8	29.7	8.1	59.4	40.6



emphasize that there is a huge structural mismatch of the labour market for triggering such a high level of unemployment (Ramar, 1994). Accordingly, although the economy has employment opportunities, required persons with suitable skills are not found in many instances creating a high level of unemployment, particularly for certain categories of labour. But, others are of the view that job creation of the economy is generally inadequate due to less economic growth the country has so far achieved. Still some others emphasize queuing up for either finding government jobs or recognized and protected private sector jobs. Moreover, factor market distortions and capital-skill complementary hypothesis are also highlighted as some reasons for having a high level of unemployment in Sri Lanka. Whatever the reason for seeing a high level of unemployment and under employment its inevitable result is increasing poverty.

## 2.2. Poverty

According to Seer's definition of development if level of poverty of a country has considerably reduced within a given period that country has acquired a reasonable level of development. There are a number of methods to measure the extent of poverty. Out of them, Gini coefficient, especially is used to determine how income has been distributed among the population of a country and resulting poverty levels. For the past few decades, Sri Lanka's Gini co-efficient ratios can be presented as follows.

**Table 01: Trends in Income Distribution**

Year	1970	1980	1990	2002	2009	2012
Gini Coefficient	.41	.43	.47	.47	.49	.48

Source: Annual Reports (various), Central Bank, Sri Lanka

Gini co-efficient is developed based on the Lorenz Curve by the formula,  $A / A+B$ , where A represents the area between the equal distribution of income line ( $45^{\circ}$  degree line of the Lorenz curve) and the Lorenz curve (actual income distribution line) in a graph shown in the positive quadrant, and as such, bigger the A area higher is the income inequality. B represents the area between Lorenz curve and the rest of the area in the lower section horizontal and vertical axes of the diagramme. Substituting extents of these two areas into the Gini co-efficient formula we find that Gini co-efficient varies from 0 to 1. If the A area is smaller income distribution is more equal and Gini co-efficient gets a smaller value closer to 0. Otherwise if the B area is bigger income distribution is more unequal and Gini co-efficient gets a higher value closer to 1. As shown by above data, Gini co-efficient for Sri Lanka shows gradually an increasing trend in values, indicating that the country's income distribution over years have widened and as a result, poverty level too has increased, indicating that a considerable percentage of people are deprived from obtaining sufficient income even to secure the basic requirements irrespective of economic growth so far achieved by the country.

Having recognized this increasing trend in poverty, a high priority has been given in the policy agenda also to solve this problem. For example, Successive governments have been implementing various types of programmes to reduce poverty in Sri Lanka. Out of them the most influential programme is the SAMURDHI PROGRAMME commenced in 1996 under which a number of sub-branches such as Department of Relief for the Poor, Sumurdhi Bank

## **1. INTRODUCTION**

Almost all the countries irrespective of their degree of development a high emphasis has been given to promote entrepreneurship to acquire a rapid development through increasing employment generation, income creation and poverty alleviation. Accordingly, Sri Lanka too has given a considerable importance to promote entrepreneur class. To some experts, the entrepreneur is one who is willing to bear the risk of a new venture if there is a significant chance for profit. Others emphasize the entrepreneur's role as an innovator who markets his innovation. Joseph Schumpeter (1883-1950) viewed entrepreneurship as a force of "creative destruction." Accordingly, established ways of doing business are destroyed by the creation of new and better ways to do them. Peter Drucker (1909-2005) describes the entrepreneur as someone who actually searches for change, responds to it, and exploits change as an opportunity. Stanford University Professor Tom Byers (2007) defines entrepreneurship as a management style (mindset) that involves pursuing opportunity without regard to the resources currently controlled.

The concept of entrepreneurship in the present form was first established in the 1700s, however, until very recent time it has not become an academically important area, and was considered as an area for making use (starting up business) for those who failed in persuading their higher studies or for school dropouts. But, today we experience an immense growth in entrepreneurship research as evidenced by surfacing a large number of academic journals on this area as many as over 50. As such, now it has gained more importance, and realized that economies have largely depended on entrepreneurship, and entrepreneurial drive and persistence for bringing economies back from economic downturns and ensuring economic development as well. Rest of the article consists of 3 sections. The 2<sup>nd</sup> section presents criteria for judging economic development. The 3<sup>rd</sup> section analyzes the status of employment data while the last section gives the conclusion.

## **2. Requirements for Judging Economic Development**

Everywhere, whether in developed or developing world, Promoting entrepreneurship has become an essential strategy for economic development. Famous development economist, Dudley Seers asks three important questions in determining the level of development of a country such as what has been happening to the level of unemployment, what has been happening to poverty, and what has been happening to the income distribution over a given time. If all three have declined considerably from a higher level, then he concludes beyond any doubt that this has been a period of development for a country (2004). In this background, as emphasized by the Organization for Economic Cooperation and Development (2003), development related problems can be mainly solved through promoting entrepreneurship as it says that "Policies to foster entrepreneurship are essential to job creation, economic growth, and poverty reduction".

### **2.1 Unemployment**

According to the official data, Sri Lanka's unemployment is currently around 4% in general and for the educated youths it is as twice as that. But, anecdotal evidence shows that Sri Lanka's percentage of unemployment plus underemployment is about 30 percent of the labour force indicating that about 1/3 of labour is being wasted currently. There is an unsolved debate going on of why such an unemployment has been appeared in the country. Some

# PROMOTING ENTREPRENEURSHIP FOR DEVELOPMENT: A STUDY BASED ON STATUS OF EMPLOYMENT DATA IN SRI LANKA

Senarath, S.A.C.L.

*Department of Commerce & Financial Management, Faculty of Commerce & Management Studies, University of Kelaniya, Sri Lanka*

## **Abstract**

*Currently a high emphasis has been given to promote entrepreneurship as a policy instrument to acquire a rapid increase in employment generation, income creation and poverty alleviation in almost all the countries irrespective of their degree of development. Accordingly, Sri Lanka too has attached a considerable importance to promote this area in formulating its development policies, and already taken a number of steps for creating more entrepreneurs. However, in most of the deliberations, the need of the entrepreneurial development is discussed theoretically without even reviewing the success so far achieved based on the relevant national wide data in the economy. Nevertheless, this study, going against this conventional wisdom, attempts are made to analyze more rationally why entrepreneurship should be promoted based on the analysis of status of employment data available in Sri Lanka with catching its development so far achieved. Accordingly, the study found that the formal sectors' labour absorption has reduced from 64.7% in 1991 to 58.7% in 2013 while that of informal sector has increased from 35.6% to 41.3% in the corresponding period on account of not expanding the entrepreneur category in the employment structure of the economy, beholding a higher level of unemployment for the more educated youths as substantiated by the available official data which indicates that open unemployment for the educated youths is as twice as that of lower level educated persons.*

*Thus, more importantly, the study shows that percentage of the size of employers or the successful entrepreneurs compared to those of other sectors' has been stagnated at inadequate low level around 2 to 3 percent of the employed over the study period, and this fact highlights the failure of the country's attempts so far made to increase entrepreneurs, and why entrepreneurship should be really promoted in order to increase employment generation, income growth and poverty alleviation for the economy. Also, the study concludes suggesting more elaborative ways and means for increasing the size of the volume of employers or successful entrepreneurs to acquire a rapid increase in employment generation, income creation and poverty alleviation for the economy.*

**Keywords:** Status of the employment, Entrepreneurship, Employment, income and poverty alleviation

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### **5.1. Recommendation to SMEs**

In adapting the technology by the SMEs the barriers faced by the SMEs are mainly the internal organizational factors does not support for the adaptation of the technology. Which is the problem of the research where to adapt the technology the SMEs should be overcome those internal barriers in the organizations according with the survey done following recommendations can be made in the SMEs perspective for the SMEs improvements with the technology adaptation.

- 55% of the employees have not receive proper training and development to reduced that contribute employees in the organizational decision making process where the employees can make suggestions on the improvement of the organization.
- 58% of organizations have no systems for measure the customer feedbacks in the organizational decision making operational level employees are the best tool to measure the customer feedbacks with the experience they have with the handling customers
- 58% of organizations are not achieve the customer satisfaction at the same time 38% of the organization have not achieve the employee satisfaction as well ensure the employee satisfaction with the business which increase the customer satisfaction the tool for the measuring employee satisfaction with the employee turnover which indicates the employee satisfaction
- 57% of the organizations have not achieve the mutual trust between employees to ensure the integration of the organizational work flow provide the team culture in the organization with the employees which create more clarity and the reliability of the decisions made by the organizations where the SMEs as a whole having the aware about the business growth of the organization and the future as well.

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Sample of 100 respondents includes 43% organizations which already adapting new technology to their day to day business operations majority of rest 57% organizations are to be adapted to new technologies they believe in the traditional manual operations. At the same time from the 43% of technology adaptors the 79% of the organizations adapted to the technology very recently which is less than 10 years' time period with the survey data that is proven the most of the SMEs are adapting technology in the recent competitive environment. Organization structure, culture and the manufacturing strategy shows a close relationship with the level of technology adaptation by the SME in Sri Lanka. From the target population 56% of the organizations have accepted that their organizations have not proper organization structure where the responsibility and the authority distribution happen. Same as the organizational culture 58% of the organizations are accepted that they have not operating in a culture where the innovations can be accepted. With the findings the other important finding was that the 58% of the organizations have not manufacturing strategy which can be used to achieve the existing level of customer satisfaction in the business operations but the human resource practices and the top management commitment toward the organizational growth is considerable in the SMEs in automobile sector in Sri Lanka. 49% of the organizations have the top management commitment as well as the better human resource practices to ensure the employee commitments to the organization.

## **5. CONCLUSION AND RECOMMENDATIONS**

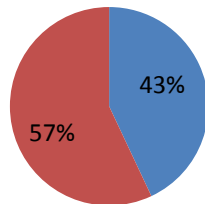
In the SME technology adaptation that is proven that the it helps to increase the customer satisfaction 58% of the organizations have accepted that the existing system have no capabilities to ensure the satisfy the customer requirements means that the SMEs need innovative technology to increase the customer satisfaction and also the 58% of the organizations have accepted that they cannot even achieve the current operational objectives with the current traditional and the manual operations. In that perspective the SMEs have real requirement of adapting innovative technology in increasing the standards of the products / service quality.

Small businesses can no longer allow themselves to be left behind their larger counterparts when it comes to new technology. There are now a whole host of cutting-edge innovations that smaller companies can make use of, such as cloud solutions, flexible working equipment. While all of these will not be of use to each and every company, it is important to consider investing in technology so SMEs do not lose ground on rivals, or in terms of industry best practice.

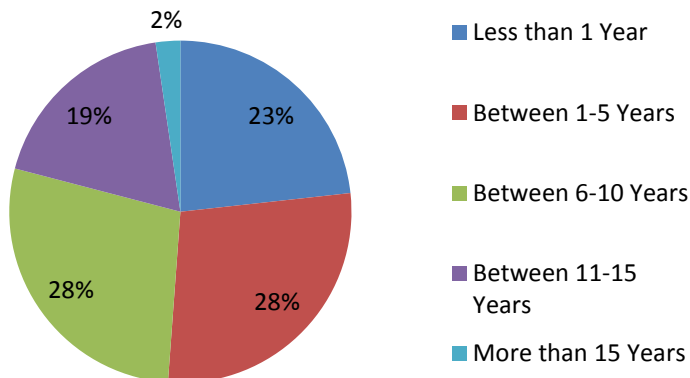
Solutions such as cloud technologies can enable an SME to build further scalability and flexibility into their organization and investing in this area now will provide a small business with the capability many larger firms have, which bodes well for future growth. In the perspective of the SME the level of technology adaptation will plays a major role in gaining competitive advantage over the competition as well the protecting the growth of the business in getting the long term sustainability over the dynamic environment in that the strengthen the internal organizational factors are very much considerable in the organizational perspective.

The survey was conducted during October/November 2014 among the SMEs in western province. Collection of information from magazines, articles, and related research was done in the secondary data collection and from that the approach to the primary survey is taken. As per the finding most of the SMEs in the Sri Lankan context have not been adapted the AMT for their day today activities and on the other hand the period of adapting the technology is very recent years by looking at the trend that can be identify the new trend in adapting the technology in recent five years is very much high the reason may be the improvements in the organizational awareness of the technological adaptation.

■ Adaptors    ■ Non Adaptors



**Figure 1: Technology adaptation**



**Figure 2: Age of Technology Adaptation**

Most of the organizations have no proper organization structure since most of them are operated as a sole proprietary business and the most of the owners have the authority on the all the decisions from the operational decisions to strategic decisions. The sample have represent the all the types of organizations in the equal percentage.

Discussing the authority allocation and the responsibility allocation within the employees are in the minimum level which indicate the no proper organization structure. Most of the organization which not having the proper organization structure not having the proper adaptation of the technology which show the strong positive relationship.



reach desired goals. Effective implementation of AMT mostly involves organizational and managerial atmosphere and practices, which are dissimilar to what is being appreciated and exercised in more traditional environments. The reason behind this is that the new technologies directly defy conventional strategic options and norms. Organizational culture denotes a general concept that defines the multifaceted areas of knowledge framework which employees apply to accomplish their duties and engender social/collective behavior. Ravasi and Schultz (2006) indicate that organizational culture provides guidance for organization members act and interpret in different situations through establishing a set of shared mental assumptions.

The literature review provides common characteristics of organizational structure types and reveals several definitions of organizational structure. “In essence, structure is the architecture of business competence, leadership, talent, functional relationships and management” (Wolf, 2002). Walton (1986) identifies structure as the basis for organizing, to include hierarchical levels and spans of responsibility, roles and positions, and mechanisms for integration and problem solving.

Organizational structure is defined in the Dictionary-Organizational Behavior (2003) as: “The established pattern of relationships among the components of parts of a company. The way that a company is set-up. The formally defined framework of an organization’s task and authority relationships”.

Organizational structure for Andrews (1995) “Consists of job positions, their relationships to each other (e.g., independent, part of a work-group or team, and reporting relationships) and accountabilities for process and sub-process deliverables”.

Sablynski (2003) succinctly defined organizational structure as “How job tasks are formally divided, grouped, and coordinated”. In “Organizational theory” Borgatti (1996) asserts an organization develops based on its size, its technology and its environmental requirements. Borgatti includes degrees and types of horizontal and vertical differentiation, control and coordination mechanisms, and formalization and centralization of power as determinants of organizational structure. Peguin (2003) supports Borgatti when commenting on horizontal and vertical differentiation by describing the up-down (vertical) communication linkages addressing efficiency and control, and the left-right (horizontal) communication linkages fill organizational needs for coordination and collaboration.

Scholl (2003) believes control and coordination are two essential functions performed by an organization structure. The first, “Control - Insuring that decision makers at all levels use the managerial or hierarchical constraint as one of the criteria in making their decisions”.

#### **4. DATA ANALYSIS**

According to the data collected by the researcher using the convenience sampling technique the following key findings has been observed during the data analysis. The main data gathering technique was questionnaires. The questionnaire is designed with clearly defined questions in the quantitative aspects. Scaling techniques are mostly used for measure the qualitative aspects in the questionnaire and ranking questions as well open ended questions are planned to be asked from the respondents in order to get a good combination of qualitative and the quantitative areas in the research.

The Department of Census and Statistics, (DCS) bases its classification on employment and accordingly those establishments employing less than 25 persons is grouped under small and those employing over 25 persons is grouped as large scale.

Defining SMEs by the number of employees has also been widely used. This method is usually straightforward, but can also face some problems due to factor intensity of different industries. Moreover, part time workers and family workers, who function both as managers and workers, create some definitional problems. In Sri Lanka when measuring size by employment the following definitions are often used.

In this study, SMEs are defined as those employing less than 25 workers in according with the definition and the classification of the Department of Census and Statistic of Sri Lanka. This definition was also adopted by H.M.S Priyantha, (2004) in his study.

### **3.2. Advance Manufacturing Technology**

The literature on Advanced Manufacturing Technologies (AMT) is split into separate areas, although they all are interconnected. When one considers AMT he needs to address fields such as: Investment, Assessment, Implementation, Development and Benefits of AMT. Numerous definitions for AMT have been presented. In a broad sense, AMT suggests both soft and hard technologies which are being employed to enhance manufacturing competencies (Chung et al., 2009). Previous studies reviews prove the influence of implementing AMTs on improving manufacturing productivity (Spanos, 2008; Koc et al., 2009). The term of AMT encompasses a wide group of computer-controlled technologies, which have been introduced within the past two decades. It happened because of new achievements in information technology. AMT basically refers to technologies related to manufacturing process. Such technologies are employed to store and control data to reduce process variability and product changeover costs, which consequently would lead to enhancement in both product quality and productivity. However, some AMTs have turned out to become a total failure, whereas some achieved satisfactory results, but yet to reach desired level (Singh et al., 2010).

### **3.3. Organizational Structure**

There are numerous studies in AMT literature that exactly deal with strategic issues. In the middle of those, the organizational adjustment always has had a determining role. The definitions of an organizational design have been presented to integrate the technical and social systems. Various researchers stated that the exact benefits of the AMT adoption in the manufacturing companies can be achieved and materialized only in case of compatibility of the current organizational design, with the alterations to be confronted (Small, 2006).

According to Ghani et al. (2000), higher performance happens when a company opts for an AMT that fits its structure and its employees. As the organizational structure of SMEs is evolutionary, rather than being revolutionary, in many industrial firms, the match between structure and technology takes several years after implementation (Hajipur et al., 2011). Moreover, the acceptance of new technology in the organizations, which are naturally reactive to technological adoption and have no organized effort to exercise organizational change, would take longer time compared with more proactive and organizationally flexible firms. Preparing employees for the adoption, prior the start of the process, seems essential to

## **2. IMPORTANCE OF INDEMNIFY THE INTERNAL BARRIERS TO ADAPTING THE TECHNOLOGY**

As an emerging industry in Sri Lanka Auto mobile industry is having a huge potential in the market in that the SMEs having the more opportunities in growing their business and the expand the current business operations. In that the adaptation of new advance manufacturing technologies will attract the more loyal customers as well as the more profitability to the organization in the day to day operations. And on the other hand understand the factors affecting towards the advance manufacturing technological adaptation will help them to overcome these barriers in the future to create the definite competitive advantage over the competitors.

## **3. LITREATURE REVIEW**

Complexity, dynamism, and uncertainty have become dominant characteristics of recent competition patterns which resulted in a demand-diversified market with more multifaceted products (Singh et al., 2010). In the global business environment, technology is one of the salient elements for remaining competitive (Jabar et al., 2010). Manufacturing inevitably has been influenced by re-definition of competitiveness and evolved to keep abreast of the latest market demands and arisen technologies. SMEs should reassess their manufacturing processes and strategies and indispensably they should define an environment which is the result of integration of latest manufacturing strategies and business processes. Advanced Manufacturing Technology (AMT) has been considered as a viable solution to improve efficiency and lower costs of manufacturing firms and it has taken a determining role in this process.

Even with clarifying and identifying benefits and contribution of technologies for SMEs, there are issues regarding the effective exploitation of these technologies. Problems regarding planning, installation, and implementation stages of AMTs can prevent the SMEs from enjoying the benefits of technologies (Ungan, 2007). The outcome of companies in terms of performance using AMT does not only depend on whether the employed technology is state of the art or not. In fact maximizing the performance of employed AMTs does not depend on technology itself, how well it is implemented, is a crucial factor (Waldeck and Leffakis, 2007).

### **3.1. Small and Medium Enterprises**

There is no universal definition for SMEs since the definition depends on who is defining it and where it is being defined. The World Bank (WB) in a study of SMIs (1997) categorized small as those that had 1-49 workers as small, 50 –99 as medium and above 100 as large. As is evident from the foregoing classifications, there has been no effort in recent times to provide a clear definition for identification of the SMEs for development and research purposes, thus making all analytical studies of SMEs a difficult task. Furthermore it has also been observed that there is no definition of micro enterprises, which is generally categorized under the umbrella of “Informal Sector” However from the point of view of policy formulation and evaluation of the contribution of the sector, it is important that attention is paid to the definition of the sector while ensuring flexibility.

# **ORGANIZATIONAL STRUCTURE INFLUENCE ON THE TECHNOLOGICAL ADAPTATION BY THE SMES IN SRI LANKA: WITH SPECIAL REFERENCE TO AUTOMOBILE INDUSTRY**

Herath, H.M.R.P. and Cooray, N.H.K.

*Department of Marketing Management, Faculty of Commerce and Management Studies,  
University of Kelaniya, Sri Lanka*

## **Abstract**

*The objective of this study is to assess the level of influence by the organizational structure in the adapting the new technologies in the Small and Medium Enterprises (SMEs) in the Sri Lankan context. The objective of the paper provides the better understanding to the SMEs to organize their organizational structure to achieve the desired goals and objectives by utilizing the hard technologies in the organizational context. This study consists with the comprehensive literature review and also with the primary data gathering based on the questioner. This paper is a theoretical construction that synthesizes previous studies, and centers on the internal organizational structure which influence adoption of hard technologies. This model can provide managers with practical solutions through granting in-depth understanding of whole internal environment, and awarding empirical insight into overcoming barriers to the adoption and implementation of hard technologies and other process innovations in automobile sector SMEs in Sri Lanka.*

**Keywords:** Advanced Manufacturing Technologies; Small- And Medium-Sized Enterprises; Technological Adaptation.

## **1. INTRODUCTION**

Small and Medium Enterprises (SMEs) play an important role in any economy through generation of employments, contributing to the growth of Gross Domestic Production (GDP), embarking on innovations and stimulating of other economic activities (Gamage, 2000). Therefore, for the developing countries, it is important to accelerate the growth of SMEs in order to gain sustainable development. The numbers of SMEs in Sri Lanka tend to increase continuously.

Complexity, dynamism, and uncertainty have become dominant characteristics of recent competition patterns which resulted in a demand-diversified market with more multifaceted products (Singh et al., 2010). In the global business environment, technology is one of the salient elements for remaining competitive (Jabar et al., 2010). Manufacturing inevitably has been influenced by re-definition of competitiveness and evolved to keep abreast of the latest market demands and arisen technologies. SMEs should reassess their manufacturing processes and strategies and indispensably they should define an environment which is the result of integration of latest manufacturing strategies and business processes. Advanced Manufacturing Technology (AMT) has been considered as a viable solution to improve efficiency and lower costs of manufacturing firms and it has taken a determining role in this process.

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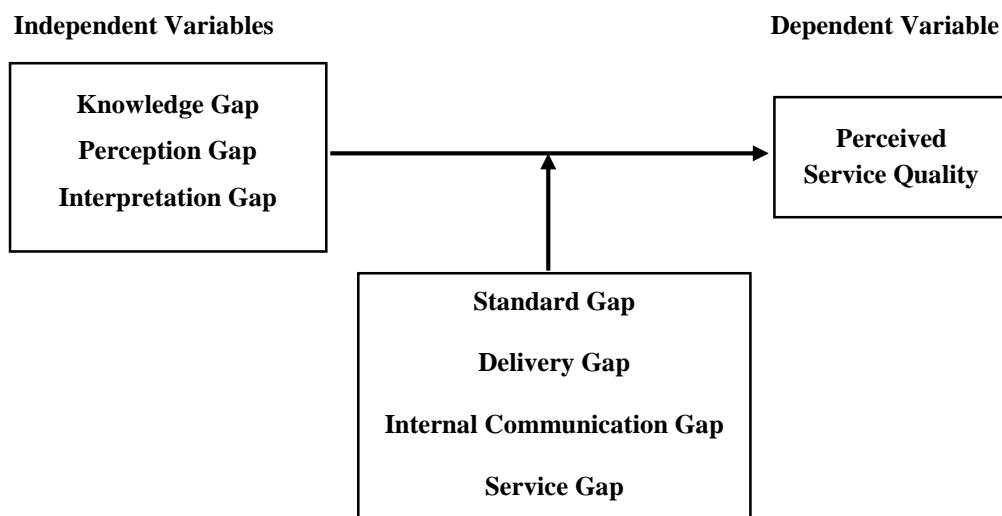
awareness program, regionally sensitive rules and regulations, policies in reshaping authority power & way of power shifting, best practices to mitigate political interference and modern technological systems to minimize process related roots to discourage service leaking points.

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According to the said content of the gap model and the arguments found in early studies, we arrived to a conceptual mapping in constructing the service delivery model along with two main paths. Firstly, it postulates the directional path connecting independent variables into dependent variable, and secondly the proposition of how moderating variables effect on the original path (*see figure 1*). Having said that, we propose the propositions to be hypothesized in future studies as it exhibits the relationship paths in figure 1. The newness found here is no early researches had proposed certain gaps as moderating variables to hypothesize the relationship between service gaps and perceived service quality.

**Figure 01: Proposed Strategic Delivery Model for Sri Lankan Municipality**



**Note:** Service quality delivery system could be improved by identifying the impact of customer knowledge, customer perception and customer interpretation on perceived service quality. Further, it could monitor how standard gaps, delivery gaps, internal communication gaps and service gap could moderate the relationship proposed in the original path.

## 6. CONCLUSION

As per the proposed propositions referring to the service delivery content of local municipality system of Sri Lanka, it needs to customize the gaps related operational perspective pertaining to the existing service delivery system of the local municipalities. The conceptual framework proposed in this paper could be a navigation to understand the gaps-related priorities to be addressed in formulating strategic delivery system. Therefore, whilst the said framework finds an option for the existing knowledge gap, it could contribute for the practice gaps that may be noticed in the current municipality system. As the economic growth priorities found in Sri Lanka, it needs to strategize the local municipality system to provide well ahead services to both user segment (general public) and the business segment to encourage their economic value addition to the economic system. This conceptual paper will be a supportive document for policy related decisions in auditing service gaps and finding training, development and innovation priorities to uplift the local governmental services apart from the niche we suggested as municipality service. By modernizing the gap model, municipal council services could improve the holistic system via implementing delivery

## **4.1 Constructive Discussion on Service Quality Gaps**

The insights of the Parasuraman et al. (1985) had been widely employed in the literature to review the service delivering gaps but found lack of focus in public service delivering perspectives. The model aims to show the salient activities of the service organization that impact the perception of quality. Moreover, the model displays the interaction between these activities and identifies the linkages between the key events of the service organization or marketer which are pertinent to the delivery of a satisfactory level of service quality Mursaleen M, Ijaz M, Kashif M. (2014). The links are termed as gaps or discrepancies that is to say; a gap represents a significant problem to achieving a satisfactory level of service quality (Ghobadian et al., 1994). Moreover, Parasuraman et al. (1985) suggested that service quality is a function of the differences between expectation and performance along the quality dimensions. It has further discussed the content of the service quality gaps in the study of Seth and Deshmukh, (2005). The service quality instruments found in the early literatures have been reviewed to measure the consumer's perception of service quality. Further, Iwaarden et al. (2003) discuss five generic dimensions in this regard.

1. Tangibles that include the physical facilities and appearance of the individual
2. Reliability reflects the ability to perform the agreed services accurately.
3. Responsiveness as the willingness to help customers and deliver prompt service
4. Assurance postulates as competence, courtesy, credibility, and security and knowledge and courtesy of employees' ability to motivate the trust and confidence.
5. Empathy includes access, communication and understanding the customers and concerned and attention focusing the customers.

## **5. Propositions for the Future Studies: An Alternative Model for the Delivery Systems Sri Lankan Municipality**

As per the main objective of this conceptual paper, it intends to recognize the conceptual model to be hypothesized referring to the context of service quality delivery system for the municipality of Sri Lanka. The critical literature review shows how the Gaps Model has been occupied as the base point to navigate theoretical and practical studies which have gone beyond American and European boundaries to extent all-over continents. However, it is interesting to note that the wide-ranging literatures on have been discussing the said base-model. There are studies found as alternative attempts to develop new quality measurement models and/or scales in various sectors (Candido & Morris, 2000; Brady & Cronin, 2001; Luk & Layton, 2002; Getty & Getty, 2003; Chiu & Lin, 2004; Chatterjee & Chatterjee, 2005; Gupta, Urban, 2009, McDaniel & Herath, 2005, Baccarani, Ugolini & Bonfanti, 2010, Lysonshi & Madhavi, 2011, Calabrese & Scoglio, 2012). We propose the original Gaps Model remains as a reference point in literature with respect to the niche of service quality and service delivery-related perspectives. In addition, new technologies and the growing awareness of the dynamic nature of services highlight the need for an updated analytical perspective which takes into consideration the essential factors noticed in the competitive environments (Macdonald, Wilson, Martinez & Toosi, 2011; van der Wiele, van iwaarden, Williams & Eldridge, 2011). However, strengths of the Gaps Model still affiliates with its relative simplicity, linearity, and the rationality of the firm actions which integrate via intelligibility and its communicative force. It is our view that these same strong points may nonetheless pose a challenge to the model.



***Gap1: Customers' expectations versus management perceptions (knowledge gap):***

It is because of lack of marketing research orientation, inadequate upward communication and management layers and their decision making.

***Gap2: Management perceptions versus service specifications (standards gap):***

Inadequate Commitment to service quality, inadequate task standardization, a perception of unfeasibility, and weaknesses of goal setting are the observed factors in this regard.

***Gap3: Service specifications versus service delivery (delivery gap):***

This is due to the role ambiguity and conflict, Poor technology job fitting, poor employee-job fitting, unfitting supervisory control systems, lack of perceived control and lack of teamwork.

***Gap4: Service delivery versus external communication (internal communication gap):***

This is resulted through inadequate horizontal Communications and tendency to over-promise.

***Gap5: The discrepancy between customer expectations and their perceptions of the service delivered (perception gap):***

This is resulted through the influences exerted from the customer side and the shortfalls (gaps) on the part of the service provider. In this case, customer expectations are influenced by the extent of personal needs, word of mouth recommendation and past service experiences.

***Gap6: The discrepancy between customer expectations and employees' perceptions (Interpretation gap):***

It is because of the differences in the understanding of customer expectations by front-line service providers.

***Gap7: The discrepancy between employee's perceptions and management perceptions (service gap):***

This is due to the differences in the understanding of customer expectations between managers and service providers.

The model has identified seven key discrepancies relating to managerial perceptions of service quality and task linked with service delivery to the customer. This gap model could be associated with the processes of services, requirements of people, authority power of local government's constitution and their mandatory services to the citizens, competency level of staff, competency level of delivery system and feedback mechanism. There were two major sides that have been categorized as service provider sides and customer sides. Best value perspective measurement of service quality in public services sector should consider customer expectation and perception of services. As Robinson (1999) argues, it is said that there is little consensus of opinion and much disagreement about how to measure the service quality, but it has proposed by Parasuraman (1986) on how to assess the service quality. Therefore, local authorities-related services process could be designed and assessed with quantified parameters.

effective if it is adequate to achieve their purpose that mean producing anticipated result. Meanwhile it is efficient if it makes or functions in the best possible way with least waste of time and effort. As argued by Boum (2006) “Being effective is about doing right things, while being efficient is about doing things in the right manner”

## **2.4 Human Resource Competence in Public Services Delivering Systems**

The public service delivery system depends on the quality of the public sector or local authority workforce which is determined by the strengthen competency based human resource management. It does usually focus to improve the workforce attitudes, skills, knowledge in addition to the workforce performance-related positive values and skillful ethics. Therefore, the government will need to confirm their efficient level with their front line staffs by selecting the criteria to deliver courteous or efficient and effective service to the customers. At the same time, local authority needs to implement the necessary strategies and initiatives to ensure individual and organizational performance in the public sector. Overall competent in human resources based on the delivering services to the public by portraying and engaging good ethics should involve with relationship between man and man-driven ethics towards the citizens (Mamat and Mahamood, 2010). This argument specially highlights the gravity of human competencies for service deliveries. Sri Lanka too, it is essential to develop human competencies as per the priorities found in terms of regional and industrial natures to extend productive service deliveries to publics.

## **3. METHODOLOGY**

It has followed literature based approach by reviewing and analyzing how different empirical evidences have been used in early studies to approach for the methodology being used in this study. Accordingly, secondary information have been used as the research method whilst reviewing and analyzing the gravities of previous research works to enrich the research approach. The propositions have been proposed based on the proposed conceptual framework to contribute for the existing knowledge gap in service delivering perspectives of local authorities. This paper has followed a deductive approach in building arguments to postulate the service delivery related concepts and their relationships to support for the proposed model to be tested. Therefore, exploratory nature of literature review has been followed as the main research method to understand the propositions proposed along with the conclusion.

## **4. Analysis on Service Delivery Gaps and Approach to Research Propositions**

Most of empirical evidence have been generally found referring to service quality perspective to service delivery system along with the behavioral responses of satisfaction. There are seven main gaps in the service delivery model as discussed by Parerasuraman et al. (1985). There are five gaps found as associated with the external customers namely gap 1, gap 2, gap3, gap 4, and gap 6. Those gaps are found with direct relationships linked to customer and organization, and task associated with service delivery to customers. These gaps have been identified as functions of the way in which service is delivered.

The conceptualization of those service delivering gaps has been given below along with the measures to be tested in demining the degree of gaps behave.

policy have affected to evaluate customer satisfaction level and performance level in organization.

Hence, Peter (2007) has argued that the performance of their service delivery covering on two areas namely customer satisfaction and government accountability. The accountability in local government is to search dimension to close to the communities. That has affected to make things away to boost up their knowledge and expectation for the betterment of local government authorities (Owusu, 2008). The frameworks and structure of local government accountability stand up from transition of management in the local authority that inspired with a vision-gearred plans for local government (Mzini, 2011). It has highly concerned about the service delivery that effect to the objectives within the local government areas.

The management of local authority has become a critical element in the day to day operations and that has affected to the minds of clients or stakeholders in overall. The local governments are setting the strategies to measure and certify customer retention and motivating their staff to be more customer-focused and service oriented in order to achieve the quality of performance in their service delivery systems. The application of modern facilities like ICT (Information Communication Technology) could be a best practice to be used in Sri Lanka to address government service sector related inefficiencies. As it denotes in one of the local studies carried out by Dissanayake (2011), ICT could contribute and facilitate the process to change the way how government thinks and works which result bringing transparency into the system, and convert it into a dynamic engine that facilitates growth in Sri Lanka. It indicates the possibility of extending the currently available ICT penetration rate to meet efficiency in public services.

## **2.2 Customer Satisfaction in Service Delivery**

Customer anticipation and perception factors, according to Liu and Fang (2009), are more crucial for customer satisfaction. And customer satisfaction is positively proportional with actual scenario, excitement situation or disappointment resulting from perceived outcome in case of expectation (Mortazavi, et al, 2009, Munusamy and Fong, 2008). Delivering a services and getting customer feedback regarding municipality services could be determined by the organizational performance (Mortazavi, et al, 2009). Customer satisfaction is depending on their expectation level and perception. Customer expectations are part of quality of product and services (Munusamy and Fong (2008). Customer satisfaction derives the success of the organization and it as a qualitative assessment of the services delivered. In this regards to CSSP (Center for the Study of Social Policy) (2007), refers that government servants' responsibility is to deliver the services for development purpose, and lack of the profit motive does not mean that customer satisfaction is not important in the public and nonprofit world. Therefore, local authorities need to be alert on their service deliveries considering community as the immediate customers.

## **2.3 Delivering Effectiveness and Efficiency in Municipality**

Effectiveness has been defined by Oxford Dictionary as the level to which something anticipated is successful in producing a desired result is success. Meanwhile effectiveness defined as achieving maximum productivity by using existing resources in the proper way. Effectiveness and efficient are most crucial words for service delivery system that being used to evaluate the service delivery performance. As mentioned by Boum (2006), something is

the utmost importance because they will provide much-needed leadership for administrative transformation, promoting new attitudes and approaches, and dealing the implementation of programs and policies that will improve service delivery.

## **1.4 Objectives of the Study**

The main objective of the study is to examine a conceptual framework in addressing service delivery gaps to propose a model in filling knowledge gap referring to Local Authorities in Sri Lanka. In so doing, the study has focused to following specific objectives too.

- To investigate the literature based arguments referring to service delivery gaps
- To review service delivery related concepts in conceptualizing strategic service delivery system
- To conceptualize in presenting propositions to modeling a service e delivery framework for the municipality system in Sri Lanka

## **2. LITERATURE REVIEW**

### **2.1 Issues on Government Service Delivery Systems**

The effective delivery function of local government or authorities could make level of government closet to the people. Local government is accountable for the services delivered to the communities within their area and districts. Most of local government should be responsive in meeting local needs and being able to deliver as their functions. According to Cathy (2008), the allocation of resources by local governments is found as a critical issue to be addressed. In Sri Lanka, the municipal councils is providing local services referring existing stages of policy decisions. It has to demarcate service delivery related decisions in delivering effective result to the stakeholders. Further, policy makers must establish the suitable rules and regulations that can benefit to the community (David, 2001). In this context, municipal council and other local authorities need to clarify the respective service demarcations (David, 2001). There are few local governments decide to provide a service, and try to reduce demand for the services through educational program and use of their regulatory power and taxing powers. There are situations where they provide the services and charge a fee that recovers all the cost. That may help reduce demand for excessive use of, the service (Muggan, 2008).

Based past researches noticed, several issues may affect institutions to measure customer satisfaction referring to expectations and the excellence in service delivery. The lack transparencies obstruct governmental effectiveness and make opportunities for corrupt and uncontrollable practices remained in local authorities in the developing countries. In addition, Andrews (2003) identifies areas of concerns for measuring customer satisfaction in in the public sector firms especially including changes in resource responsibility, changes in transparency, changes in responsiveness and performance and changes in corruption and political accountability. It is more important to evaluate the local government performance and improve the quality of the services to assist to greater roles to be performed in the local government. The scenario of the allocation of resource for each municipality by local government remains as an important issue to be addressed. The legitimate government delivery system is a crucial factor in ensuring the people's satisfaction level regarding local government services. As mentioned by Mzni (2011), service quality and implementation

## 1.2 Electoral system of Local authorities

Since 1987, all the local authorities have been nominated using the open list-proportional representation system. There is a single electoral area for the whole local authority. Electors vote for a party/independent group and assign their preference(s) for individual candidates. Each party/independent group nominates one of their candidates as the applicant to become Mayor (MC) or Chairman (UC, DC). If that party obtains the largest number of seats, then their candidate becomes Mayor/Chairman. The following table shows the distribution of local authorities as found in 2011.

**Table 1: Distribution of Local Authorities by Province in 2011**

Provinces	MC	UC	PS	Total
Central	4	6	33	43
eastern	3	5	37	45
North central	1	0	25	26
North western	1	3	29	33
Nothern	1	5	28	34
Sabaragamuwa	1	3	25	29
Southern	3	4	42	49
Uva	2	1	25	28
Western	7	14	27	48
<b>Total</b>	<b>23</b>	<b>41</b>	<b>271</b>	<b>335</b>

Source: [www.clgf.org.uk](http://www.clgf.org.uk)

## 1.3 Overview of the Service Delivery Mechanism in Municipality System

In assessing the appropriateness of different service delivery mechanisms, it is important to note that the choice is not between public and private provision. Rather, the real issue facing each municipality is to find a proper combination of options, one which can most effectively achieve its policy objectives. Municipalities and councilors should embrace innovative new approaches to delivering core municipal services by engaging non-municipal groups and interests to participate in this sphere of local government. The development of new capabilities and methods should go hand in hand with measures to enhance the accountability of the administration and to make relationships of mutual respect and confidence between councilors and the administration. The adoption of any option should be based on a crucial review of existing service delivery mechanisms. The municipal council should consult with all affected stakeholders in the expansion of their institutional plan, particularly consumers of the relevant service and the workers involved in delivering the service. National and provincial government institutions are collaborated on the development of a major capacity-building initiative to help municipalities to develop and implement plans to improve service delivery systems. Municipalities can access guidance regarding different service delivery options, as well as their overall approach to renovating administrative systems. Plans to launch the Municipal Infrastructure Investment Unit (which will deliver advice to municipalities on private sector investment in municipal infrastructure) are already at an advanced stage. Appropriate support for other methods to transforming delivery systems should also be established. Involvement by all councilors at municipal level is noticed with

# **MUNICIPALITY DEVELOPMENT FOR BUSINESS GROWTH: CONCEPTUALIZATION OF STRATEGIC DELIVERY MODEL FOR SRI LANKA**

Wasantha, H.L.N., Sekak, M.A. and Ghosh, A.

*Lincoln University College, Malaysia*

## **Abstract**

*This study focuses to review the concepts of strategic delivery model to conceptualize a model for delivery system, delivery of superior customer value, performance of the delivery system and origin of superior customer meaning. The context of the paper refers to municipality, which is an important aspect in local authorities. As per the scope of the study, it examines strategic delivery system & higher order construct to figure out strategic delivery gaps, and the content priorities in designing strategic service delivery systems for local municipality systems. Further, it has reviewed the related literature based sources on the concepts related to managerial perspectives which interlock with service delivering perspectives to build conceptual arguments. The paper suggests how to develop strategic municipality delivery systems by addressing to the service delivery gaps may occur. The conclusion has been made to provide a direction in implementing the proposed propositions for the future studies and to implement for upgrading the effectiveness of the existing service delivering systems in municipality.*

**Keywords:** Municipality, Service Delivery System, Strategic Delivery Gap, Effectiveness

## **1. INTRODUCTION**

### **1.1 Local Government System in Sri Lanka**

Sri Lanka could be noted as a unitary democratic republic system with three tier level of government central, provincial and local. Local government is formed in the 13th amendment to the constitution. The second level provincial authorities are ruled by the Provincial Councils Act 1987 and the main Acts involving to third-tier local authorities are the Urban Councils Ordinance 1939, the Municipal Councils Ordinance 1947 and Pradeshiya Sabhas Act (No.15) 1988. The Ministry of Provincial Councils and Local Government is liable for policy development and regulations at the national level, while the provincial ministers of local government are liable for the execution at local level. There are nine second-tier provinces and 330 third level local authorities, 23 municipal councils, 42 urban councils and 270 rural “Pradeshiya Sabhas”. The central government provides grants to the local authorities. Local authorities’ responsibility is to collect taxes and user fees as well as rents & grants and property rates. Provincial councils’ responsibilities include internal rules and order, education, housing and agriculture, provincial economic plans whilst local authorities have accountability for health, utility services and roads. Pradeshiya Sabhas have further developmental responsibilities depending on regional demands (The Local Government System in Sri Lanka, 2012).

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procurement of WM have not been identified within the Sri Lankan context. Therefore, this research is intended to develop a decision support model to select most effective procuring method for within the Sri Lankan context. To achieve the aforementioned aim a step by step approach has been followed. Identification of the relevant selection criteria for the WM was the initial step. Thoroughly carried out comprehensive literature survey has identified 28 PSIs under seven PSC. Identified criteria and indicators were further refined through a comprehensive preliminary questionnaire survey making them more adaptable within the Sri Lankan context. The conceptual framework developed using the results of the RII analysis consisted of 23 indicators and seven main PSC. This conceptual model was the foundation of the developed the framework and AHP hierarchy.

AHP, the multi-criteria decision making tool provided opportunity to prioritise PSC and PSIs in order to identify most and least SC and PSIs. The process itself provided relative weights for each criterion while examining the consistency of data. The second and final questionnaire survey was carried among 22 industrial professionals in warehousing and SC industry as the next step of developing a framework to evaluate the procurement selection criteria for WM. according to the findings of the AHP analysis geographical, economic, technological, service level, quality related, legal and social criteria were ranked from most to least importance respectively. The analysis of responses revealed that geographical and economic criteria in WM hold higher levels of importance with compared to the other criteria in selection of WM. Although some industry practitioners accepted the social criteria as an important aspect of procurement selection of WM, the final analysis proved otherwise. Framework ranked location as the most important PSI in geographical criteria while operating cost for Economic criteria. Level of IT performance has become more important in technological criteria while reliability cycle time became the most important PSI in service level criteria. Quality of the management earned the highest PSS in quality related criteria while state regulation and reputation became most important PSIs in legal and social criteria respectively.

The procurement scores in prioritised selection of WM framework give a clear idea about the relative acceptance levels of importance. Therefore the developed framework can be used as a guideline for decision making when procuring WM services for an organisation within the Sri Lankan context. With the increasing globalization and developing concepts such as global sourcing service providers has the capability of achieving the competitive edge though giving proper consideration for the relevant criteria and indicators.

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and economic criteria are relatively two times more important than the other criteria in the selection of WM, the former two criteria are relatively four times more important than social criteria.

According to the PSS of the WM, economic criteria has obtained become second important criteria with 0.210 of PSS. Under this parent category operational cost of the organization was the most important PSI where financial stability (0.256) has become the second important PSI. According to the research done by Morbeg (2004) also emphasises that, operational cost of the warehouse is the most important factor, when selecting a WM. The third and the fourth PSIs from importance level are asset ownership time completion' (0.178) and 'size of the fixed assets (0.164). The results of PSSs indicates that purchasing capacity of the organization (0.084) is at the least in importance.

The outcome of the normalised comparison matrix of geographical criteria gives a remarkable importance to location having a PSS of 0.367. Accessibility (0.276) and physical infrastructure of the warehouse (0.241) have earned second and third positions. According to the research findings of Bhakoo (2007) stated that location is one of the main criteria when selecting WM. Space availability (0.117) PSI has achieved the least importance with a lower PSS. Level of IT performance (0.332) has achieved the highest importance in technological criteria while state of art technology (0.312) and complexity of the warehouse (0.220) have obtained second and third positions respectively. The security techniques (0.136) PSI has earned least importance comparatively with a lower PSS.

The PSS achieved through normalisation process of PSIs in service level criteria has indicated that the reliability cycle time (0.370) as the most vital indicator. It has obtained the highest PSS among others. Responsiveness (0.352) has become the second important PSI while the delivery performance (0.278) has become the least important. The quality related criteria normalised comparison matrix presents quality of the management (0.445) as the most significant PSI while quality awards (0.335) and value added services and its quality (0.220) have become the second and third respectively. According to the outcomes of PSIs in legal criteria through normalisation, the state regulation (0.542) has become the most vital PSI while ethical consideration (0.458) has become the least. Confidentiality of the information (0.600) was the most important PSI in social criteria while Level for reputation (0.287) and number of competitors (0.113) have arrived at second and third places respectively.

## **6. CONCLUSION AND RECOMMENDATIONS**

With the evolution of businesses, various business strategies are practiced by the organizations to achieve its ultimate goals and objectives effectively and efficiently. Not only that it remarks, those strategies are key points for many commercial organizations to cope with its competitors and survive in the dynamic business world. With the increasing globalization and developing concepts such as global sourcing, SC have a tendency to experience comparatively longer supply lead-times (Baker, 2007 and Ballow, 2007). When, the distance from supplier to customer increase it generally increases the lead time of the supply process (Baker, 2007). To cope with this issue warehousing becomes a crucial part (Baker, 2007).

There are number of factors that directly affects the selection of suitable WM procurement option from the available resources. However, a systematic decision making criteria for

PSIs. The results of this analysis are presented in Table 4. The second column of Table 4 presents the local priorities representing the relative weights of PSIs with respect to relevant PSC criterion. The overall ranking, shown in the third column of the table, were obtained by multiplying the PSS of the each PSI by the PSS of the relevant PSC.

**Table 4. Prioritized criteria for selection a WM**

Criteria	PSS	Overall PSS	Overall Rank
<b>Economic criteria</b>	0.210		
Operating cost	0.318	0.066	3
Financial stability	0.256	0.053	6
Asset ownership	0.175	0.036	11
Size of the fixed assets	0.164	0.034	12
Purchasing capacity of the organization	0.084	0.017	17
<b>Geographical criteria</b>	<b>0.247</b>		
Location	0.363	0.089	1
Accessibility	0.276	0.068	2
Physical infrastructure of the warehouse	0.241	0.059	5
space availability	0.119	0.029	15
<b>Technological criteria</b>	0.149		
Level of IT system	0.332	0.049	7
State of art technology	0.312	0.046	9
complexity of the warehouse	0.22	0.032	13
Security techniques	0.136	0.020	16
<b>Quality related criteria</b>	0.137		
Ability to provide value added services & its quality	0.445	0.060	4
Quality of the management	0.335	0.045	10
Quality awards	0.22	0.03	14
<b>Service level criteria</b>	0.128		
Responsiveness	0.37	0.047	8
Delivery performance	0.352	0.045	10
Reliability cycle time	0.278	0.035	11
<b>Legal criteria</b>	0.071		
State regulations	0.542	0.047	8
Ethical considerations	0.458	0.045	10
<b>Social criteria</b>	0.051		
Confidentiality of the information	0.6	0.03	14
Reputation	0.287	0.014	18
Competitors	0.113	0.006	19

The geographical and economics criteria hold higher percentages comparative to the remaining criteria where social criteria holds a lower percentage from importance level. As an added advantage, AHP provided the room to compare the criteria and present the importance level through a magnitude. Therefore, it can be emphasized that geographical

Selection criteria	A	B	C	D	E	F	G	Sum	PSS
Technological criteria	0.077	0.087	0.072	0.075	0.032	0.066	0.086	0.496	0.071
Service level criteria	0.066	0.086	0.072	0.043	0.034	0.050	0.047	0.398	0.057
								7.000	

Ehrhardt and Tullar (2008) stated a perspective with a higher performance score is preferred over one with a lower performance score. According to that among the seven criteria, the highest PSS, which is 0.247, holds by the geographical criteria. Therefore geographical criteria are the most significant in the selection of WM. According to the findings of Fan (2000) and Gol (2007) the main criteria of selection of WM was the geographical criteria. Economic criteria gain the second place in the selection of WM with a 0.210 PSS. The third, fourth and the fifth places in selection of WM from importance have been given to the technological criteria (0.149), quality related criteria (0.137) and service level criteria (0.128), legal criteria (0.071), social criteria (0.057) respectively. According to the research, the least important perspective was the Social criteria with 0.031 PSS. According to the research findings of Maini (2009) social related criteria obtained less value than other criteria.

**Table 3. Consistency calculations for the PSC**

Selection criteria	A	B	C	D	E	F	G	Sum	SUM÷ PSS
Economic criteria	0.249	0.179	0.273	0.243	0.267	0.194	0.187	1.592	7.014
Technological criteria	0.219	0.247	0.240	0.302	0.321	0.211	0.172	1.712	7.045
Service level criteria	0.124	0.254	0.128	0.184	0.121	0.151	0.096	1.058	7.199
Social criteria	0.108	0.112	0.095	0.137	0.233	0.167	0.127	0.979	7.252
Economic criteria	0.094	0.099	0.108	0.165	0.128	0.184	0.175	0.953	7.562
Technological criteria	0.087	0.096	0.070	0.053	0.040	0.071	0.075	0.492	7.026
Service level criteria	0.056	0.042	0.088	0.062	0.042	0.054	0.057	0.401	7.570

$$CR = \{(\lambda_{\max} - n) / (n - 1)\} \times (1/RI) = \{(7.238 - 7) / (7 - 1)\} \times (1/1.35) = 0.029$$

Where CR is Consistency Ratio, n is size of matrix (e.g.: Number of PSC,  $\lambda_{\max}$  is the average of SUM/PSS column and RI is Random Index for n number of matrices.

As Saaty, (1994) stated that consistency ratio of 0.10 or less is positive evidence for informed judged, for all the criteria and indicators for the extended model, calculation of CR value and compare with 0.10 to check the consistency. As CR of developed model is 0.029 it can be decided that data used for criteria comparison is consistent. The AHP calculations for all the individual indicators in selection of WM model were similar to the AHP calculation on overall criteria comparison.

### (3) Develop multidimensional procurement selection criteria for WM framework

The final output of the AHP tool implementation in this research process is developing the framework for procurement selection criteria for WM with prioritised criteria and prioritised

Detail questionnaire was distributed among thirty industry practitioners including procurement managers and warehouse specialists. The respondents were asked to give their individual opinion and indicate the magnitude of the importance placed on procurement selection criteria and procurement selection indicators using the one-to-nine ratio scale. Criterion in each level was compared pair wise with respect to their importance to a criterion in the next higher level and starting at the top of the hierarchy and working down. For all decision alternatives, geometric mean was calculated from the allocated weights by the participants; the mean for each alternative was considered in the analysis. Comparisons in a matrix may not be consistent as in eliciting judgments. This gives rise to multiple comparisons of an element with other elements that leads to numerical inconsistencies. Cheng and Li (2001) concluded that the consistency calculation is a critical component of AHP, and it makes AHP more reliable and useful as decision-making tool. Table 1 shows the pair-wise comparison matrix of PSC developed using gathered data from questionnaire survey for procurement selection criteria for WM. The weightings of Table 1 are then normalized and presented in Table 2. The comparison matrix is normalised by dividing each entry by the sum of the entries in its column. After the normalising the entries in the pairwise comparison matrix, the sums of each row will be calculated. The averages of each row will be calculated in order to obtain the Procurement Selection Score (PSS) which will allow the researcher to compare and prioritise PSC and PSI. The consistency calculations are given in Table 3.

**Table 1. Pair-wise comparisons of PSC**

Selection criteria	A	B	C	D	E	F	G
Economic criteria	1	0.723	1.53	1.953	2.244	2.732	2.711
Technological criteria	1.383	1	1.607	2.206	2.504	2.962	3.012
Service level criteria	0.654	0.622	1	1.561	1.381	2.121	1.686
Social criteria	0.512	0.453	0.641	1	1.815	2.594	2.223
Economic criteria	0.446	0.399	0.724	0.551	1	3.065	3.234
Technological criteria	0.366	0.338	0.471	0.386	0.309	1	1.312
Service level criteria	0.369	0.332	0.593	0.450	0.326	0.762	1
<b>SUM</b>	4.729	3.868	6.566	8.106	9.579	15.236	15.178

A - Economic criteria; B - Geographical criteria; C - Technological criteria; D - Quality related criteria;

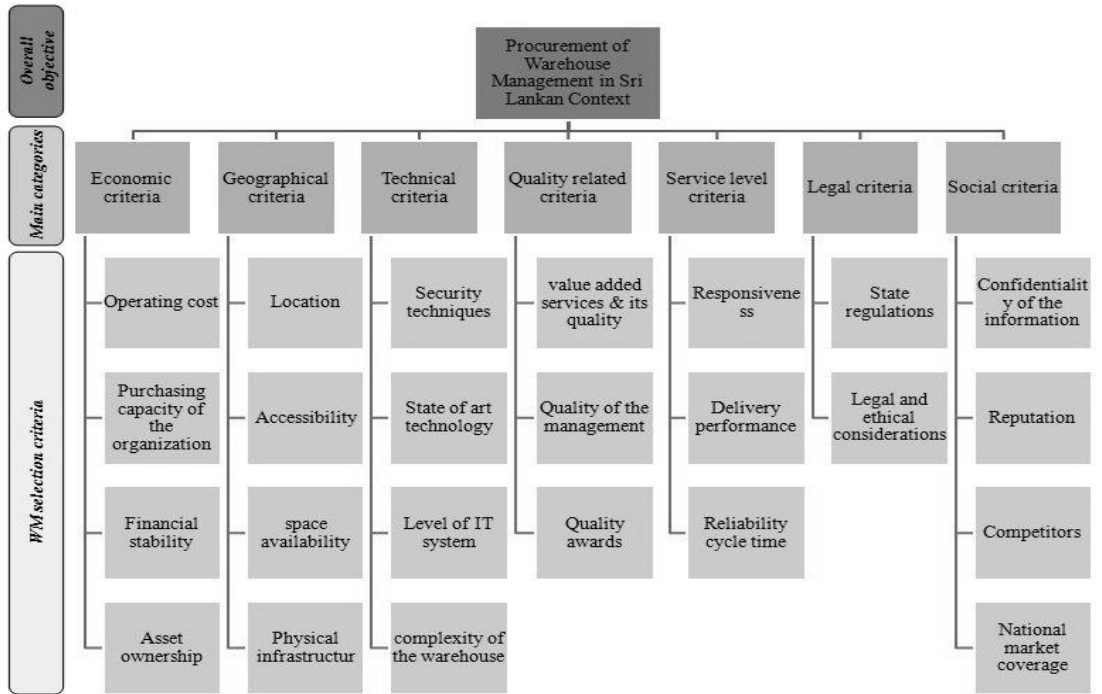
E - Service level criteria; F - Legal criteria; G - Social criteria

**Table 2. Pair-wise normalized comparisons of the PSC**

Selection criteria	A	B	C	D	E	F	G	Sum	PSS
Economic criteria	0.211	0.187	0.233	0.241	0.234	0.179	0.179	1.464	0.210
Technological criteria	0.292	0.259	0.245	0.272	0.261	0.194	0.198	1.722	0.247
Service level criteria	0.138	0.161	0.152	0.193	0.144	0.139	0.111	1.072	0.149
Social criteria	0.108	0.117	0.098	0.123	0.189	0.170	0.146	0.953	0.137
Economic criteria	0.094	0.103	0.110	0.068	0.104	0.212	0.202	0.894	0.128

## 5.1 Develop hierarchy for evaluating procurement selection criteria for WM

In order to design the paired comparison matrices, the AHP decision hierarchy was formed as given in the Figure 1. AHP hierarchy was developed evaluating the procurement selection criteria for WM in Sri Lankan context as the overall objective, WM Procurement Selection Criteria (PSC) as the second level of the hierarchy and WM Procurement Selection Indicators (PSI) as the third level.



**Figure 1: AHP Hierarchy for evaluating procurement selection criteria for WM in Sri Lankan context**

## 5.2 Data analysis using Analytic Hierarchy Process (AHP) tool

A conceptual framework developed using the findings of literature and primary survey. The development of framework includes data collection and analysing using AHP information in order to prioritise key criteria to develop the framework. a detailed questionnaire survey was conducted to prioritise the key performance selection indicators in conceptual framework. The general approach of AHP is a pair-wise comparison scheme that results in each criterion having a weight and each decision alternative being scored on each of the criteria. Each decision alternative then gets an overall score, computed as the weighted average of its criterion scores (Ehrhardt and Tullar, 2008). AHP uses simple pair-wise comparisons to determine weights and ratings so that the respondent may concentrate only on two factors at a time. This helped the respondent to recognize the more vital element between a pair. AHP is consisting with set of mathematical calculations mainly focusing three steps. “Pair-wise Comparisons”, “Normalize the Comparison” and “Consistency Calculations”.

information technology capability, delivery performance, information sharing and trust, operational performance, compatibility, financial stability, surge capacity, geographical spread and range of services, the long-term relationship, reputation and optimum cost have been recognised as the outsourcing criteria by Qureshi et al., (2008).

However these criteria identified within the international context are not always applicable for the Sri Lankan context. Therefore, is an emerging need to identify the influencing factors specific to procurement of WM in the Sri Lankan context in order to develop an effective decision making framework. Taking that requirement in to consideration a preliminary questionnaire survey was carried out among more than 20 industrial practitioners including procurement managers, executives, warehousing specialists. Questionnaire was developed based on the literature review including procurement selection criteria for warehouse management discovered by numerous international researchers. The findings of the questionnaire survey was used to determine the procurement selection criteria for WM in Sri Lanka. Preliminary questionnaire was distributed among industry practitioners who are having more than five years experience within the SCM and warehousing industry.

Based on the preliminary questionnaire survey 95% has mentioned best practice WM option as the outsource option. Additionally, semi outsourced option is also practiced by few logistics companies as a WM procurement method. Main reasons for selecting the outsource method are cost saving and better quality services. Additionally, 60% of industry experts have mentioned having a risk management approach as an added advantage in outsourced option. Remaining 5% has mentioned their less financial capability and loss of managerial control as reasons for practicing in-house option. In order to identify the impact of the factors it was necessary to rank according to their importance. Relative Importance Index (RII) analysis was used to determine the relative ranking of the factors. The results obtained from questionnaire survey were then transformed to importance indices.

According to the final results twenty-eight main procurement indicators were identified as having a significant influence over procurement of WM under the Economic, Geographical, Technological, Quality related, Time related, Legal, Social criteria. According to the findings of RII analysis complexity of the facilities, adaptability to change, quality awards, ability to develop long-term relationships and national market coverage have obtained less than 0.5 RII value. Therefore, above mentioned factors were not used for the detail questionnaire survey.

## **5. MULTIDIMENSIONAL PROCUREMENT SELECTION CRITERIA FOR WAREHOUSE MANAGEMENT FRAMEWORK DEVELOPMENT PROCESS**

The three step approach adapted to develop procurement selection criteria for warehouse management framework is as follows;

- (1) Develop hierarchy for evaluating procurement selection criteria for WM
- (2) Data analysis using Analytic Hierarchy Process (AHP) tool
- (3) Develop multidimensional procurement selection criteria for warehouse management framework

SCM integrates supply and demand management within and across companies. According to various researches numerous advantages of SC includes reduction in unnecessary SC cost, increase in customer service expectations, supply and distribution lines are lengthening with greater complexity, addition of significant customer value.

A typical SC comprises with different links such as suppliers, manufacturing centers, warehouses, distribution centers including transport service providers, retail outlets and end users (Klobas, 1998). Warehousing plays significant role within the modern SC (Baker, 2007). Warehouses are used to hold or preserve goods in huge quantities from the time of their purchase or production to their actual use or sale (Baker, 2007). According to the argument of Baker et al. (1989), facilitating movements of goods to the end user in an effective and efficient manner is the main objective of the warehouses. Further the significance of warehouses is highlighted during seasonal production, seasonal demand, large-scale production, quick supply, continuous production and price stabilization. Therefore as a major component which is very common for most of the SC, warehousing should achieve best performances to ensure the overall performance of the SC. Although there various benefits generates from the warehousing function in terms of cost and efficiency it carries several disadvantages as well. Baker (2007) has identified the cost of inventory as being 13% of total SC costs, while warehousing accounted for a further 24% and Baker (2007) has recognized that inventory costs (24%) significantly higher than warehousing cost (22%). Therefore, researcher has identified that warehousing cost / WM cost accounts larger portion of total SC costs in worldwide.

### **3. PROCUREMENT OPTIONS FOR WAREHOUSE MANAGEMENT**

Sourcing (in-house option), and outsource procurement have been identified as the most widely used warehouse procurement options in today's business world. In house option is where an organization has direct ownership to plan, organize and control all functions while outsourcing is contractual agreement between the customer and one or more suppliers to provide services or processes that the customer is currently providing internally (Fan, 2000). However according to the findings of many researchers outsourcing has become most significant business after 1980s. Fan (2000) clarifies some of the factors boosting the popularity of outsourcing option as improving quality, improve level of service, increase flexibility over the process and better facilitate internal and external environment changes. Further, cost reduction was identified as the major reason for out sourcing while better focus of core-activity becomes second priority. However Maini (2009) argues that, outsourcing is something more than cutting costs and saving money, it is about how to do things quickly, more efficiently and reach the market faster than competitors do. Author has mentioned that maximizing flexibility over the workforce and gaining access to highly qualified employees are also key things in outsourcing.

### **4. FACTORS AFFECTING THE SELECTION OF PROCUREMENT OPTIONS OF WAREHOUSE MANAGEMENT**

Different researches have presented numerous factors affecting the selection of procurement options of warehouse management. Cirpin and Kabadayi (2015) presents selection criteria namely service quality, reliability, on-time performance, good communication, customer support, speed of service, flexibility, management quality, willingness to customize and order cycle time. Quality of service, size and quality of fixed assets, the quality of management,



providers, retail outlets and end users. Each level in the process adds value and each stage in the SC is connected through the flow of products (Klobas, 1998). Therefore, each link of the chain should perform in its best to ensure the continuity and efficiency of the whole chain. Accordingly, to make a Supply Chain (SC) efficient and effective, each partner of the chain has to perform efficiently and effectively.

In the modern SC process warehouse is one of the most important elements for linking the chain and it is essential to give out warehouse resources efficiently and effectively to enhance the productivity of the SC (Baker, 2007). In present world, it is difficult to continue ordered production or distribution process without considering the warehousing (Lorentz, 2010). Basically there are two types of procurement options for the Warehouse Management (WM) namely in-house WM and outsource WM (Lieb, 2008; Sangam, 2010; Maini, 2009). According to the argument of Fan (2000), to be competitive in the unpredictable market, organizations are in a real need of focusing more on their core business, reduce total costs and increase the efficiency to their level best (Fan, 2000). To achieve these objectives and organizational goals outsourcing has become an increasingly popular option in many firms.

According to Alwis (2015), the concept of 'Supply Chain Management' is not very well understood, locally, thus resulting in heavy productivity losses. Thus, it is time that businesses and policy makers in Sri Lanka realise the true potential of SCM to achieve competitive advantage by learning from global players and start investing in supply chain professionals to contribute to business and economic growth. Researches related to SCM are limited while only available researches have only looked into processed food, textile, supermarket and tea industries (Liyanage, 2010; Warnakularsuriya and Jayaratne, 2009; Subramaniam, Rahman and Ramachandran, 2007; Jayaratne, Styger and Perera, 2011). The concept of warehouse outsourcing (third party warehousing) is also playing a vital role in Sri Lankan SC. Although various procurement options available for the procurement of warehouses, a standard set of criteria have not been developed for selecting procurement option from the alternative procurement options. Lack of proper decision making framework for procurement of WM within the Sri Lankan context has limited its benefits. Therefore the aim of this research is to develop a multidimensional framework for the procurement selection criteria for WM in Sri Lankan context.

The paper structure begins with an introduction to the study and followed by a literature review on SC, WM and WM procurement. Section four presents factors affecting the selection of procurement options of WM while section five presents the three-steps approach in developing multidimensional framework for procurement selection criteria for WM. The final section summarises conclusions derived from the research findings and recommendations.

## **2. SUPPLY CHAIN AND WAREHOUSE MANAGEMENT**

SC encompasses all the activities associated with the flow and transformation of goods from the raw material stage to the end user as well as associated information flows (Ballou, 2007). Lee (2004) argued that, the best supply chains are not just fast and cost effective, they are also agile, adaptable and they ensure that all their companies' interests stay aligned. According to Council of Supply Chain Management Professionals (2015), Supply Chain Management (SCM) encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. In essence,

# MULTIDIMENSIONAL FRAMEWORK FOR PROCUREMENT SELECTION CRITERIA FOR WAREHOUSE MANAGEMENT IN SRI LANKA

Konara, K.M.G.K., De Zoysa, T. S., Rajini, P.A.D. and Vijerathne, M.G.D.T.

*Department of Building Economics, University of Moratuwa, Sri Lanka*

## **Abstract**

*A chain is only as strong as its weakest link. In order to retain the effectiveness and efficiency of a Supply Chain (SC), each segment or the link of the SC require to perform their portion, effectively and efficiently. Modern organisations are in a process of creating innovative concepts and practices in order to obtain the competitive edge among the competitors. Warehouse Management (WM) is one such concept that has been introduced to improve the performance of SC. It plays a major role as the most commonly procured business function over the years, whereas world class companies has identified it as an enabler for improving logistics. However irrespective of the worldwide revolutionary achievements gained by SC and WM, procurement of WM within the Sri Lankan context is still lagging behind. Therefore this research is mainly intended to develop framework which enable evaluating procurement options of WM within the Sri Lankan context.*

*To achieve the aforementioned aim literature survey and questionnaires survey were used as main data collection tools while Relative Importance Index (RII) method and Analytic Hierarchy Process (AHP) multi-criterion decision making tool were used to analyse data. The scope of the framework extends to both micro and macro environments of the related industry. Thus it comprises the criteria of economic, geographical, technological, quality related, service level, legal and social environment. The findings revealed that there are mainly three procurement methods presence in Sri Lankan WM industry namely in house option, outsource option and semi outsource option out of which outsourcing been the widely accepted method. Economic and geographical criteria became the mainly considered criteria when selecting a WM. the developed framework can be used as a guideline for decision making when procuring WM services for an orgnisation within the Sri Lankan context.*

**Keywords:** Supply Chain Management, Warehouse Management, Outsourcing, Procurement Selection Criteria, Analytic Hierarchy Process (AHP)

## **1. INTRODUCTION**

According to the Ballow (2003), the SC encompasses all the activities associated with the flow and transformation of goods from the raw material stage through to the end user, as well as associated information flows. A typical SC comprises with different links such as suppliers, manufacturing centers, warehouses, distribution centers including transport service

Code	Language	Memory wastage
Insertion sort	Java	4
Insertion sort	C#	0
Factorial	C	0
Bresenham circle	Java	0
Insertion sort	C#	0
Reflection of Shape	Java	13

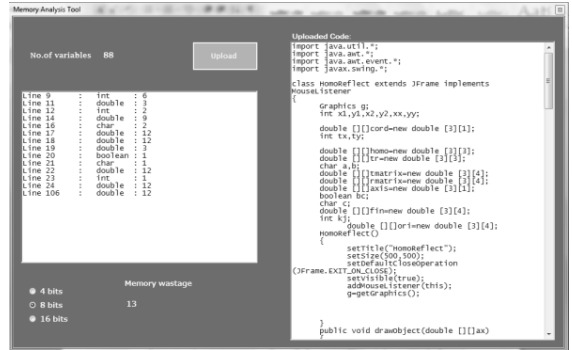


Figure 05: Interface

#### 4. CONCLUSION

The main purpose of the designed tool is to observe the efficiency of the programs which are developed by the students during practical lectures. The students can check their programs for memory wastage and they can realign their variables to reduce the waste of memory and unnecessary execution delay. These practices will lead the students to learn efficient programming from the beginning. This product may help to overcome one of the existing problems in software development for embedded or mobile devices when they are unnecessarily unknowingly allocating memory for variables. The deliverable tool will help to user to reduce the time consumption of manual activities like finding memory wastage. And also it helps to reduce the wastage of memory. As a result of this automation, manual workload is reduced and the student's efficiency in programming can be increased. The study is currently ongoing to suggest the students and programmers an efficient realignment method for their codes using this tool and further the tool will be improved using more programming languages ,compiler level calculations and pre and post alignment execution time calculation using the above given Figure5 (Figure 5. Snippet for execution time calculation). The execution time improvements make the end user to be aware about the effects of memory wastage in execution time of a program.

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### 3. RESULTS AND DISCUSSION

There are several studies has been done in this domain in more deeper level but for the undergraduate level it's difficult to implement and used the tools according to their studies. Most of the studies are focused on dynamic memory allocations, using dynamic memory allocation functions such as malloc(), alloc(), realloc(), etc... But the optimization using variable alignment is not considered [1]. Some methods are driven by tracking the memory usage changes in programming [2]. The studies are based on some applications which run in embedded systems such as speech recognition etc.[2].The concept that used here to make the students aware while learning programing regarding memory efficient programs in CPU and Embedded system perspective and train the students in efficient programing for almost all the leading programming languages used in university level programming practical.

The developed software tool will show you the amount of memory wastage according to the selected block size of memory. The software tool shows the alignment of variables from the given code with the recoverable wasted memory. So the tool helps to the programmers to easily identify and rearrange the variables. They can check the memory wastage often and ensure the reduced memory wastage. Therefore, an efficient programming code can be developed for mobile and embedded devices.

After memory wastage is calculated, manually the developer can simply realign the program based on reducing the wastage. The memory alignment of a program not only affects the memory consumption of a processor but also execution time of the program. Execution time of a program can be simply calculated by the default time calculation method. The deviation in memory allocation and execution time can be observed before and after the re-arrangement of variables. The impact of memory allocation is easy to identify in a simple program; but it shows its effect on large programs. The students and developers may not be aware of random declaration of variables while developing their programs. They'll be only aimed at development and completion of code. As the program is large, there are lots of variables may be declared and scattered all over the program code. This will show the impact while executing the program. Hence, this tool will help them to identify how their reluctance in declaration of variables has caused memory wastage and slow in execution. This tool will show line by line in which, what type of variable and the number of variables present. And also shows the memory wastage according to the preferred bit alignment. So they can easily identify the variables where it is in the program and may remove unwanted variables.

```
long startTime = System.nanoTime();
methodToTime();
long endTime = System.nanoTime();

long duration = endTime - startTime;
```

**Figure 4: program**

```

public class HelloWorld
{
    double amount;
    int no;
    charopt, opr;
    public static void main(String[] args) {
        System.out.println("Hello World!");
    }
}

```

The software tool will analyze the program code and find the memory wastage by tracking the order of variables. Using the software tool students and also programmers analyze their codes and find the memory wastage of their programs. This memory space may allocate in *.bss* segment or in the *stack* segment of the memory. The programmers can concentrate on variable alignment and reduce their memory wastage by realigning the variables. Currently the technological developments move towards portable and mobile devices. The software tool will be useful for mobile and android programmers to write the memory efficient programs. The software tool has been validated using different kind of program codes for testing.

## 2.1 Implementation

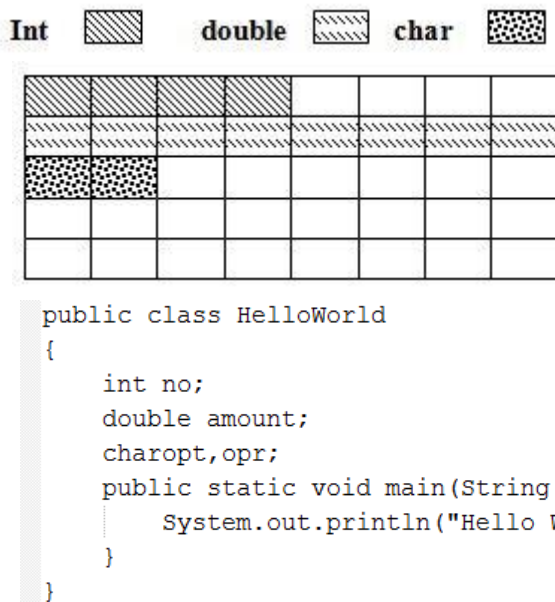
This software tool was basically implemented by the following procedure

- The total number of lines in the source code is counted.
- Each line is tested whether it contains any data types. And if so, the number of variables in the particular data type is counted and printed.
- Meantime, it was virtually aligned according to the selected bit-alignment and memory wastage is calculated.
- At the end of counting, memory wastage according to bit alignment will be displayed.

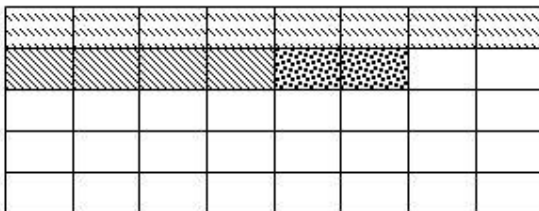
Furthermore the tool helps to programmers also to identify the memory wastage by the in-ordered variable declarations. So, they can align variables in order to reduce the memory wastage. Prepare the students to write memory efficient programs from the learning state will make more efficient developer and Software engineers in future

## 2. METHODOLOGY

We designed an efficient software tool using Visual Studio 2013 with C# which helps to find the memory wastage by analyzing the memory alignment of the given program. For an example if the memory blocks are 8 bytes each, then the memory allocation of the below given program (Figure 1. Program 1) can be calculated using Figure2 (Figure 2. Memory layout).



The Figure 2 clearly shows that there is a 4 Bytes memory has been wasted by improper alignment of variables in the program1. The wastage can be reducing as 0 Bytes by realigning the variables. The program2 has been written with reduced memory wastage using variable alignment in an efficient manner.



# MEMORY WASTAGE ANALYSIS USING VARIABLE ALIGNMENT

Vaishali, R.<sup>1</sup>, Shathana, R.<sup>1</sup>, Lojenaa, N.<sup>1</sup>, Kartheeswaran, T.<sup>2</sup>

<sup>1</sup> *Department of Physical Science, Faculty of Applied Science, Vavuniya Campus of the University of Jaffna, Sri Lanka*

<sup>2</sup> *Department of Computer Science and Technology, Faculty of Science and Technology, Uva Wellasa University of Sri Lanka*

## Abstract

*In present world, people are proficient with interactive devices. They prefer to use simple faster devices. The responsibility falls on the hands of developers. So they must be prudent while programming a device. Mainly they should consider about memory and execution time. When more memory is wasted, then it will make an impact on speed and further becomes inefficient for allocating memory for other purposes of the processes or programs that runs on the same host. Hence developers must be aware of wastage and where it occurs. It's a very simple product that help to student to find the memory efficiency of their laboratory practical (programming) and also assists the developers to analyze the wastage of memory that is caused while programming. Then after, they can manually rearrange the code for the purpose of reducing the wastage of memory. The project was designed to prepare the students in efficient programming in laboratory practical. The extreme goal of the project is to provide the knowledge on memory management to Information Technology (IT) undergraduates from the learning state.*

**Keywords:** memory, wastage, analyze, programming

## 1. INTRODUCTION

In present world, people are proficient with interactive devices. They prefer to use simple faster devices. The responsibility falls on the hands of developers. So they must be prudent while programming a device. Mainly they should consider about wastage of memory and time. When more memory is wasted for mobile or embedded device programming, then it will make an impact on speed and further becomes inefficient. Hence developers must be aware of wastage and where it occurs. Generally when a variable is declared, a portion of memory will be allocated for it. Wastage of memory may occur when it's declared while programming in an unorganized manner. This will be an issue while writing programs for embedded or mobile devices such as mobile phones, digital camera or any other hand held smart devices. As mobile devices have limited amount of memory, writing program for mobile processors not be unnecessarily large and not be consume more memory. More memory consuming programs may cause difficulty in memory allocation for other features and cause inefficient programming by becoming slower processing. Hence, we should concentrate memory efficient programming due to the lack of memory in small devices unlike in desktop or server computers. This simple software tool will somehow assist to the programming students to learn memory efficient programming and track their memory usage.

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how the educator's material could be more efficiently integrated into the game's storyline and narrative.

The contribution of this paper is that it described a concrete case study on the engenderment and evaluation of an edifying game designed according to instructional game design principles. In more detail, the game included interaction and feedback elements, a background story, clear rules, objectives and outcomes, amalgamated with scholastic aspects. As it became ostensible through the evaluation process, such a game can be facily integrated into the classroom to fortify the edification of formal curricular material. Moreover, it can be utilized for distance learning, if certain extensions are considered. Conclusively, this paper demonstrated that it is possible to engender a functional prototype of an online game that can be habituated according to the educator's concrete needs. In conclusion, it is hoped that this study integrates to the subsisting research on instructional games and that the presented game will eventually become an efficacious inculcative implement.

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predicated on the scores for the eight dimensions. Nevertheless, when examining each one of the 22 questions, it became ostensible that the girls learned to utilize the game more expeditiously (Mdn = 5), than the boys (Mdn = 3),  $U = 90.5$ ,  $p = .22$ ,  $r = .37$ . However, the boys considered the game to be more copacetic (Mdn = 4), than the girls (Mdn = 3),  $U = 100$ ,  $p = .49$ ,  $r = .32$ .

Lastly, the students were divided into three independent groups, according to their age and grade. Thus, the first group consisted of 12 1st grade students, the second group of 13 2nd grade students, and third group of 12 3rd grade students. A Kruskal-Wallis test was then applied to evaluate differences among the three grade conditions. The results of the analysis designated a paramount effect of grade ( $-2(2, N=37) = 6.74$ ,  $p = .34$ ) only on the students' opinion about the consistency of terms that were utilized throughout the game. Indeed, the follow-up tests that were conducted to evaluate pairwise differences among the three groups revealed that the 3rd grade students did not consider the utilization of terms to be consistent. In particular, a post-hoc test utilizing Mann-Whitney tests with Bonferroni rectification showed consequential distinctions between group 1 and 3 ( $p = .18$ ,  $r = .38$ ), and between group 2 and 3 ( $p = .42$ ,  $r = .33$ ). However, there were no paramount differences according to the students' grade on any other questions or the eight dimensions of the questionnaire.

## **6. DISCUSSION AND CONCLUSION**

This study presented the design and development of the prototype of a configurable online 2D game, aimed at availing the edifier in the edification of Grade 10 Mathematics. Furthermore, the prototype was evaluated through a pilot study and a long-term intervention in authentic school settings, in order to assess its usability aspects and to find any possible imperfections. According to the results of the two evaluation studies, the students' opinions about the game were mostly positive, and they considered it to be a subsidiary and engaging learning implement, regardless of age and gender. Furthermore, concerning the game's usability, most of its features elicited average to positive replications from the students and the educators' kindred. Moreover, the educators encountered no difficulties in configuring the game, and the orchestrated inculcative activities were concluded prosperously. Thus, it was deduced that the particular game could authentically be prosperously incorporated and utilized by educators as a supplementary implement for the edification of formal curricular material.

These findings are inspiring and suggest that game-predicated learning activities are well-accepted and appreciated by students. Furthermore, the great consequentiality of the educator's feedback and guidance on how to utilize the game became ostensible, in accordance with Hays (2005) and Fisch (2005). The work presented in this paper had certain constraints; for instance, the game is addressed to younger ages and has a short storyline and a circumscribed number of challenges and functions. Supplementally, the aforementioned evaluation studies focused only on the game's usability, as the researchers' intention was to elicit students' replications to this game prototype. Our future work aims at ameliorating and elongating the game, by integrating incipient features, more hints and avail messages, and a longer storyline. Moreover, a multi-player feature should be integrated to the game, in order to assess its impact on student's opinion about the game. Withal, it would be worth investigating whether cooperative or competitive game playing can enhance students' engagement and motivation. Lastly, further research should be conducted in order to examine

In addition, according to the students' answers to the open-ended questions, the game: (a) availed them understand the edification, as well as some arduous mathematical concepts better; (b) it is facile, regaling and congenial; (c) it avails apply a more innovative approach to the cognition process; and (d) it is flexible and, thus, it can constitute a subsidiary implement for the revision of the edification edified. Thus, concerning the first research question (What is the students' opinion regarding the usability of the 'Volcanic Riddles' game?), it was deduced that the students were quite positive.

However, some students encountered minor quandaries regarding the utilization of the game. For example, five students verbalized in their comments that they would prefer the game to be in the Sinhala language, in lieu of English. Other observations were that it is quite simple, and it does not provide enough explications on some solutions. Their opinion can additionally be justified by the fact that they mostly played the game from home, without the avail of their edifier. It should be noted that the student's replications to the cognate questions during the pilot study were a lot more positive. For instance, regarding the game were a lot more positive. pilot study that it was very facile to understand how the game is played, while two pupils were neutral ( $M=4.67$ ,  $SD=0.778$ ,  $N=12$ ). Withal, seven pupils vigorously acceded and three pupils acceded that the game did not require any intricate computer utilization, whereas two pupils were neutral ( $M=4.42$ ,  $SD=0.793$ ,  $N=12$ ). Eight pupils vigorously concurred and three pupils acceded that the game could avail them amend their skills, whereas one pupil was neutral ( $M=4.58$ ,  $SD= 0.669$ ,  $N=12$ ). The student's game were a lot more positive. Pilot study, structure, functions, and motivational appeal were additionally quite positive. However, only three students vigorously concurred that they utilize the game's "Help" option, whereas two students acceded and seven students vigorously disaccorded ( $M=2.50$ ,  $SD=1.88$ ,  $N=12$ ). Indeed, the students preferred to ask the teacher and the researchers when they did not ken or understand something in the game.

These results can be expounded on the premise that the pilot study included a minute number of activities (2), while in the long-term intervention the students had 14 weeks to explore the game. Moreover, in the pilot study, the activities took place during class with the assistance of the edifier, and in the form of a congenial break, while in the long-term experiment the students would authenticate from their homes and in their leisure, in order to play the game. Lastly, concerning both edifiers' opinion about the game and its administration website, it was quite positive, as they considered them to be amicable and facile-to-use. Hence, regarding the second research question (In what inculcative context could this game be utilized by educators?), it was concluded that the game could genuinely be utilized as a subsidiary edifying implement for classroom activities. Moreover, with some ameliorations and extensions, it could supplementally be utilized in distance-learning scenarios. Adscitiously, it became ostensible that, in accordance with Hays (2005), the educator's feedback and the debriefing sessions are very consequential for the fortification and guidance of the students.

Adscitiously, a third research question (Will the gender or grade of students affect their opinion about the usability of the 'Volcanic Riddles' game?) was withal investigated in this evaluation study. Firstly, it was examined whether the students' opinion for the game differs predicated on gender. After some preliminary tests were conducted on the data, it was decided to utilize the Mann-Whitney U Test, since it can be used when the variables are not obligatorily customarily distributed. According to the results, it can be postulated that there were no consequential distinctions between boys' and girls' opinions regarding the game,

arithmetic and geometrical concepts, in accordance with the material edified in the classroom. The evaluation data withal included the researchers' notes and observations from the edifying activities. The results were quite emboldening; however, they could not be generalized, due to the inhibited number of the participants and that of the edifying activities.

For that reason, a second evaluation experiment that lasted 14 weeks was withal conducted. The participants of this study were 37 desultorily culled students from a regime school, consisting of 23 boys and 14 girls aged 15 years. The students acceded voluntarily to participate in the experiment by interacting with the game daily and individually. Responsible for fortifying them during the whole intervention was primarily their edifier. Afore the intervention could commence, the cooperating teacher organized an exordial session, where the researchers presented the game to the students. Moreover, the edifier apprised the students' parents about the intervention and they signed the indispensable parent consent forms.

For the purport of this evaluation an incipient, more consummate, paper-predicated questionnaire was constructed. The particular questionnaire, which elicited both qualitative and quantitative data, was predicated on the Questionnaire for Utilizer Interface Gratification (QUIS) (Chin, Diehl and Norman, 1988), and on Lund's USE Questionnaire (USE) (2001). The 22 questions that were included in the questionnaire corresponded to the following eight dimensions: perceived usefulness, ease of avail, ease of cognition, gratification, screen, terminology and system information, system capabilities, and overall reaction to the software. The questions' type was five-point Likert scale, as afore. Adscitiously, the questionnaire included two open-ended questions about the best and worst aspects of the game.

The participants played the game from home daily during the 14 weeks of the intervention. The edifier was able to check their involution, as all participants had personal accounts. Every week, the edifier updated the game's challenges with incipient questions predicated on what was edified in the edifications. Moreover, every a fortnight a debriefing session was conducted in the school computer laboratory. At the terminus of the intervention, the students consummated the innominate questionnaire. In the next section, the results of the analysis of the questionnaire are being analytically presented.

## 5.2 Results

The students' answers to the Likert type questions of the questionnaire were analyzed by descriptive statistics, and their answers to the open-ended questions were grouped according to their mundane themes. The statistical analyses were performed utilizing the SPSS 20 statistical package, with the caliber of paramountcy set to 0.05. The game's usability was assessed utilizing the students' performance in each dimension. This was calculated utilizing the mean score of their answers to the corresponding questions (Boone and Boone, 2012). Generally, as the results denoted, the students' opinion about the game's usability was moderate to good. In particular, regarding the gamedinease of cognition, the statistical results are the following:  $M = 3.77$ ,  $SD = 1.07$ ,  $N = 37$ . The students, the static concerning the gametactical results terminology and system information are additionally positive, as the statistical results are  $M = 3.67$ ,  $SD = 0.84$ ,  $N = 37$ , and  $M = 3.63$ ,  $SD = 0.77$ ,  $N = 37$ , respectively. Furthermore, their replications to the rest of the questionnaire's dimensions were all above average, while the mean score for the students score est of the questionnaire= 37, and  $M = 3.63$ ,  $SD = 0.770.96$ ,  $N = 37$ ). However, the lowest score was observed in the dimension concerning the system capabilities ( $M = 3.33$ ,  $SD = 0.98$ ,  $N = 37$ ).

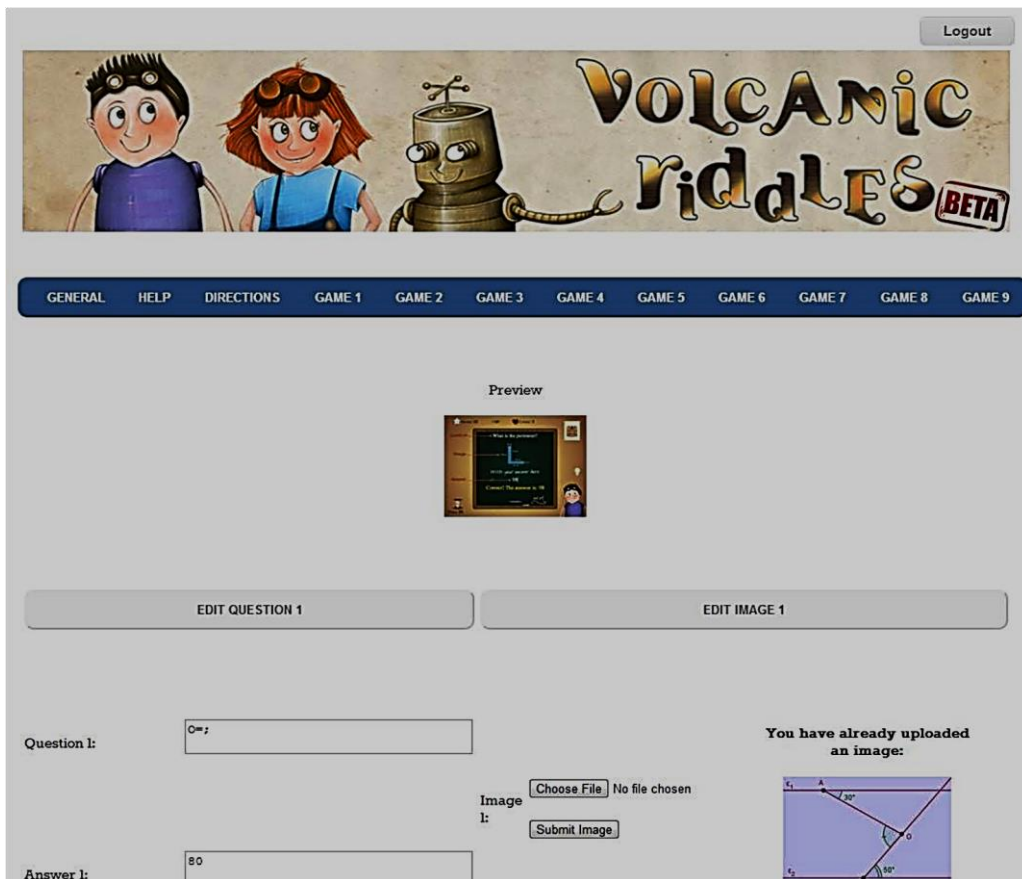


Figure 2: The administration website of the game

## 5. EVALUATION OF THE GAME'S PROTOTYPE

### 5.1 Description of the evaluation activities

A paramount objective of this study was the evaluation of the game as to its usability, capabilities and perceived usefulness, in order to amend it in subsequent editions. For that reason, several inculcative activities, which accommodated as an expedient to amass qualitative data, were organized and implemented. Hence, the researchers had the opportunity to observe the students' reaction to the game, and to ask them for their feedback. Supplementally, in order to accumulate quantitative data, a pilot study with twelve (12) 10th grade students of a regime school was conducted. The group of students consisted of eight (8) girls and four (4) boys, aged 15 years.

The pilot study comprised two different edifying activities conducted in the computer laboratory of the school. Each one lasted about 45 two differ the questionnaire for this study included 18 questions fixated on the game in the computer laboratory of the school) boys, aged 15 years. For that reason 1 was assigned to 'strongly disagree' and 5 to 'strongly agree'. Regarding the game's content, each challenge was enriched with incipient questions on



**Figure 01: Various screens of the game**

#### **4.5 Configuration options**

As it has already been mentioned, one of the main purposes of this work was the development of a facilely configurable online game. The whole framework that was engendered consists of the online game and its administration website. Utilizing this administration website, the edifier can transmute the following: (a) the total number of each challenge's questions, (b) the content of each question and its corresponding answer, (c) the ordinant dictations and avail messages for each challenge, and (d) the images that appear in the game, as well as the images of the avail messages. Moreover, in the fourth challenge the edifier can integrate a set of more arduous questions that will be used when the player answers correctly, in order to increment the caliber of the questions' arduousness. The configuration process is the following: the educators should authenticate to the administration website and then cull and edit the game's messages, directions, questions and answers. They can withal expunge questions and answers, or integrate incipient ones, and furthermore, they can upload incipient images or expunge the subsisting ones (Figure 2). Determinately, they should preserve their transmutations in order for them to appear in the game.



### **4.3 Opposition Elements**

Furthermore, the game contains several elements of challenge and opposition, which, according to Prensky (2001), are quandaries the players are endeavoring to solve. These elements make the game more engaging, however they should be identically tantamount to the player's abilities (Prensky, 2001). In order to win the players have to consummate prosperously all the challenges of the game. However, the arduousness of the questions increases gradually, as the challenge progresses. Moreover, in the fourth challenge a different approach was followed; here, the arduousness of the questions increases with each correct answer, and decreases with each mendacious one. Hence, the caliber of arduousness habituates to the player's skills and level. As it has already been mentioned, the players have five lives for each of the game's challenges at their disposal, and they lose a life each time they make a mistake. When they lose all of their lives, the game ends. Moreover, in accordance with Malone (1980), a score-keeping mechanism and a countdown timer were integrated, in order to engender goals of different calibers. The players have one hundred seconds to answer each question otherwise they lose. They withal win points for each correct answer and lose points for each mendacious one; answers to more arduous questions are rewarded with more points.

Each player's high-score is preserved and can be accessed through the 'Options' menu, so the players can compare their high-scores.

### **4.4 Interaction and feedback**

According to Prensky (2001), engaging scholastic games should adscititiously contain interaction and feedback mechanisms that will avail the player learn. Interaction can be either between the player and the computer, or between players (Prensky, 2001). The proposed game provides the players with immediate feedback messages, in order to avail them understand and rectify their mistakes. Moreover, directions and avail messages appear in each of the game's challenges, so that they players understand how the game works and learn to navigate through it. The players can adscititiously view their high-scores, and configure some of the game's parameters, such as the game's sounds, through the "Options" menu. Supplementally, they can communicate with the authors and engenderers of the game via a web form, in order to send their suggestions and comments (Figure 1). The players can interact with sundry elements of the game; however, the game did not fortify interaction between the players by the time it was evaluated.

way, it was substantiated that the initial criteria that had been set for the final product were met, and that any technical imperfections were detected and redressed in time. Thus, the felicitous functioning of both the game and its administration website was ascertained.

## **4. DESCRIPTION OF THE GAME**

The game consists of nine challenges that the inculcator can fill up with questions, according to the course material. Since the game is addressed to Grade 10 students, attention was paid so that it is amicable and facile to utilize. An endeavor was additionally made to incorporate most of the aforementioned characteristics of edifying games into the proposed game. In this section, the main features of the game are being presented, in connection with the proportionate characteristics that inspired the game design.

### **4.1 Story and characters**

In accordance with Malone's design heuristics (1980), one of the features that make games intrinsically motivating is the theme or fantasies that are incorporated. These two elements can elicit phrenic images of convivial situations or of physical objects to the players, rendering the game more intriguing and engaging (Malone, 1980). Moreover, apart from being a source of motivation, the game's narrative can be considered as an ancillary factor that avails players make sense of the information they are presented with. Adscititiously, it can avail students learn more efficiently, especially in case of arduous content (Waraich, 2004). For that reason, a theme and a story were integrated to the game. In the game's story, three fictional friends, a boy, a girl, and a robot are vacationing on an exotic island, when the children's uncle sends them a letter to admonish them that the island's volcano is going to erupt. The three friends face nine challenges in order to amass the compulsory supplies and find a way to elude from the island. The player has to avail them consummate these challenges prosperously. Each one of these challenges contains a variable number of questions on sundry algebraic and geometrical concepts. Special attention was paid so that the questions are well integrated into the game's story. For example, in one instance of the game, the three friends visit the island's store in order to buy supplies; the players have to buy the products with the most propitious prices after the discount, utilizing their cognizance on solving equations with percentages. The players can read the game's story and information about the three heroes of the game via the 'Options' menu of the game. Each of the game's challenges is connected to the storyline of the game through its objectives and narrative. That way, the players can optate one challenge to play and do not require to play the whole game every time.

### **4.2 Goals and rules**

Another consequential characteristic of compelling instructional games that was integrated into the particular game is the presence of clear rules and goals. More concretely, the players' can cull from two different game modes: "Challenge game" and "Single game" mode. When playing in Challenge game mode, the players have to prosperously consummate the nine challenges of the game, while in Single game mode they can optate a challenge to play. The players have a one hundred seconds for each question, as well as five available lives (chances) for each challenge. They lose one life for every mistake they make. According to the rules of the game, when the players play in Single game mode and they lose, they can restart the same challenge or start another one. Otherwise, if they were playing in Challenge game mode, they have to commence from the first challenge again.

Hays (2005) reports on these heuristics, and suggests a set of design recommendations for scholastic games, accentuating on the instructional quality these games should have. More concretely, the game should be integrated into a more astronomically immense scholastic program, and it should additionally incorporate elements that avail students build incipient erudition structures or consummate their subsisting ones (Hays, 2005). Furthermore, as verbalized by Fisch (2005), the felicitous incorporation of edifying content into the game is a key factor in the design of efficacious instructional games. Students should additionally be provided with offline material and resources that could integrate to the game's inculcative value, as well as support and guidance by edifiers and parents (Fisch, 2005). Prensky (2001), points out some features that engaging games have; these are the following: objectives, opposition, interaction, representation, and outcomes. Similarly, Kiili (2005) proposes an experiential gaming model predicated on Csikszentmihalyi's flow theory and experiential learning principles; this model can be utilized for the design, analysis and evaluation of scholastic computer games. The above design guidelines and fundamental features of instructional games were taken into consideration in the design of the proposed game.

## **1.2 Development of the game**

The final framework consists of the configurable online 2D game and its administration website, which was constructed in order to facilitate the (non-programmer) edifier in the configuration of the game's parameters. In accordance with the ADDIE model for Instructional Systems Design (ISD), the engenderment of the framework comprised the following working phases: Analysis, Design, Development, Instigating, and Evaluation. Hence, a punctilious and exhaustive requisites analysis was deemed obligatory, in order to determine the conditions that the particular instructional game should meet. The researchers were sanctioned to observe the inculcative process and the students' performance during classes in a week's time. Moreover, a semi structured interview with two Grade 10 scholastic edifiers was conducted, as well as a punctilious review of the pertinent literature.

After conscientious consideration of the teachers' recommendations, it was decided that they game should be simple, without any diverting material, and that it should not require any software installation. This way, it would be more facile for edifiers to utilize it in formal school settings. Concerning the arduousness level of the game's questions, the educators suggested that it should increment as the game progresses. In integration, they verbally expressed that they would relish to be able to transmute the game's questions, according to the student's erudition and skills. Hence, a very paramount objective of this work was to engender an adaptable game that could be reused in sundry inculcative settings and activities. It was additionally decided that the game should contain sundry mini challenges that the students could play in the circumscribed time span of an individual class. That way, the game could be tailored to the caliber of the students, and it could additionally support different thematic units of the subject.

Afterwards, the game and its administration website were developed. More categorically, the game's graphics and images were designed in Adobe Photoshop and Adobe Illustrator, and then the researchers proceeded with the development of the game's prototype. Regarding the game development software, the game was engendered in Adobe Flash with the utilization of ActionScript, while the administration website was engendered utilizing the PHP scripting language. The mutable content is preserved in text files that were uploaded to the web server, and can be edited via the administration website. In accordance with the ADDIE model, the product of each working phase was subjected to formative evaluation and revisions. This

skills. The game was evaluated in a study with 153 participants, consisting of 3rd and 5th grade students. The results designate that the game availed students ameliorate their math performance and self-efficacy credences. Ahmad and Latih (2010) describe the development of a scholastic math game on fractions for primary school students. Similarly, Lee (2009) report on the engenderment and evaluation of an inculcation game on fractions and mention that it ameliorated students' understanding and performance.

Concerning the use of commercial games for mathematics, Zavaleta et al. (2005) suggest in their study that the use of a commercial game for Grade 10 school algebra enhanced students' achievement. Kebritchi, Hirumi, and Bai (2010) investigated the impact of commercial math games on 193 high school students' math performance, with positive results concerning the student's perception of mathematics, motivation, and achievement. Ke and Grabowski (2007) examined the effects of the use of adventure games on 125 5th grade students that were assigned to three groups: cooperative game playing group, competitive game playing group, and no game playing group. According to their findings, after the four-week intervention the two game playing groups had better math performance, while the cooperative game playing group had better attitude towards the subject, compared to the other conditions. In another study, Ke (2008) examined the effects of the use of computer games on 4th and 5th grade students that were enrolled in a five-week summer math program, with positive results concerning the students' attitude towards math. More recently, Kim and Chang (2010) performed regression analyses using 170,000 4th grade students, demonstrating that math computer games had a positive effect on male minority students.

Other studies fixate on the utilization of math online games for the remediation of categorical deficits, such as dyscalculia. For example, Wilson et al. (2006) engendered an adaptive online game for dyscalculia and tested it in a five-week evaluation study with nine children with math learning difficulties. The results denoted an incrementation in the children's math performance on core number sense tasks, as well as an amendment as regards their confidence in their mathematical abilities. Regarding any pertinent research projects, the E-GEMS ('Electronic Games for Edification in Math and Science', <http://www.cs.ubc.ca/nest/egems/>) project contributed on the development of sundry edifying games that incremented student engagement and achievement, and engendered several design heuristics (Klawe & Phillips, 1995).

### **3. DESIGN OF THE GAME**

#### **3.1 Basic features of educational games**

According to Malone (1980), instructional designers should endeavor to engender intrinsically motivating inculcative environments that would avail students learn in an effortless and engaging way. Computer games, in particular, contain the following three elements that make them so intriguing, and can be utilized in order to motivate the learner: challenge, fantasy, and curiosity (Malone, 1980). Malone (1980) draws upon these observations in order to develop a set of guidelines for the design of efficacious and motivational instructional computer games. In accordance with these guidelines, games should have clear goals, skeptical outcomes, feedback, and gradually incrementing arduousness levels. Furthermore, they should contain curiosity and fantasy elements, such as emotional aspects. Moreover, they should respond in a felicitous way to the players' actions, and they should provide them with cull over sundry environmental aspects (Malone, 1980).

more congruous than traditional instructional methods for the current generation of learners, whose cognitive abilities and intrigues are influenced by digital games and technology (Facer, 2003; Srinivasan, Butler-Purry and Pedersen, 2008).

Given the benefits described above, DGBL has already been implemented in sundry sectors, with three different approaches that, according to Van Eck (2006), are the following: (a) students engender their own inculcative games, with the avail of the educators, (b) educators use commercial games in class that have not been primarily developed for scholastic purposes, (c) educators use games in class concretely designed for edification by other educators, instructional designers, and developers. These instructional games, additionally kenneled as 'serious games', are customarily designed for training purposes and have many applications in sundry fields, such as inculcation, science, engenderment, and health (Sawyer and Smith, 2008). Each of the three approaches to implementing DGBL has advantages of its own; however, the most prominent benefits that DGBL offers, in general, can be summarized as follows: (a) computer games can facilitate the acquisition and transfer of erudition to incipient situations through feedback and self-assessment mechanisms (Oblinger, 2004); (b) they can withal promote the development of quandary-solving and memorization skills (McFarlane, Sparrowhawk and Heald, 2002); (c) they avail students acclimatize themselves with technology, as well as programming and computer science concepts (Kafai, 2001; Van Eck, 2006; Prensky, 2008); and (d) gaming is often a convivial activity, contributing to the development of the players' gregarious and emotional skills (Squire, 2003; Fromme, 2003; Oblinger, 2004).

Nevertheless, DGBL constitutes a relatively recent and still evolving instructional method, and there is a desideratum for more empirical evidence that could validate its authentic inculcative value, and show how it could be applied more efficaciously. As Hays (2005) points out, research has demonstrated that games can promote learning in sundry subject areas, however there is no proof that games can be utilized in all situations and for every instructional task. It is withal consequential that students are provided with debriefing, feedback, and support from the educators during the DGBL activities (Hays, 2005). Moreover, there are many practical issues that may deter the inculcator from utilizing computer games in the classroom. A prevalent impediment is that many times the game's content is not correct or it does not align with the curriculum and the cognition objectives of the classroom (Kirriemuir and McFarlane, 2003; Fisch, 2005). Withal, edifiers often encounter difficulties in identifying the inculcative components of a game, as well as integrating the game in the traditional scholastic process (Kirriemuir and McFarlane, 2003; Baek, 2008). Adscititiously, many contemporary intricate games require incipient hardware and plenty of time, and thus they cannot be played in the classroom (Kirriemuir and McFarlane, 2003). Lastly, a frequent concern of educators and parents homogeneous is the possible negative effects of gaming on children, such as addiction and extravagantly competitive comportment (Baek, 2008).

## **2.2. Review of research on computer games for mathematics**

There are several studies that report on the utilization of commercial computer games for mathematics, or present the development and evaluation of instructional games designed for the concrete subject. As betokened by the following review of germane studies, computer games can increment students' math achievement and performance, and promote positive postures towards mathematics. For instance, in a recent study, Pareto et al. (2011), engendered a teachable-agent arithmetic game that aims in training rudimentary arithmetics

Accordingly, this study addresses the design and development of an online game that could be utilized as an adaptable tool for the educational process. The purpose of the particular game would be to support the teaching of Grade 10 school mathematics, as a complementary learning tool that could enhance students' motivation and engagement with the subject. Apart from the game, an administration website was also constructed, so that the educator can ensure that the game's content aligns with the curriculum and the learning goals of the current lesson. Moreover, the educator can easily edit the game's content and images, or upload new ones, without that requiring any programming or scripting skills. Concerning the game's design, basic educational computer game design principles (Malone, 1980; Prensky, 2001; Hays, 2005; Fisch, 2005) were taken into account, so that the game would be educationally and motivationally effective. The game prototype was then evaluated both through a pilot study and a long-term (14 weeks) intervention, in order to detect any technical flaws, and to assess its usability and educational aspects, so that it could be revised and improved in subsequent editions.

Hence, this study aims at presenting a concrete case study on the design and development of the online game 'Volcanic Riddles', as well as the results of a more longitudinal evaluation study in authentic school settings, where the aforementioned game was utilized for the edification of formal curricular material. In order to investigate the criteria mentioned above, the research questions of the particular study are the following

**RQ1:** What is the students' opinion regarding the usability of the 'Volcanic Riddles' online game?

**RQ2:** In what educational context could this online game be used by educators?

**RQ3:** Will the gender or grade of students affect their opinion about the usability of the 'Volcanic Riddles' online game?

## **2. CONCEPTUAL FRAMEWORK**

### **2.1 Young people and Digital Game-Based Learning**

Recently, there has been a perpetual interest in the utilization of online games for inculcative purposes, as an expedient to increment students' motivation, engagement and achievement in sundry subject areas.

This learning approach, which amalgamates digital game-predicated activities and scholastic content, is often referred to as Digital Game-Predicated Learning (DGBL). DGBL is considered able to render the cognition of arduous or uninteresting subjects more accessible, engaging, and relishable (Malone, 1980; Kafai, 2001). Indeed, computer games play an integral role in today's children's lives, being part of their culture and one of their most frequent and favored activities (Mumtaz, 2001; Fromme, 2003). The reason for that could be their intrinsically motivational appeal and the fascination they instigate to puerile people, by encompassing elements of curiosity, challenge, and fantasy (Malone, 1980). Moreover, it has been suggested that computer games have the ability to immerse players in a state of 'flow' (Csikszentmihalyi, 1990), characterized by deep and full involution and delectation in the activity. This state of 'flow' was described by Csikszentmihalyi (1990: 4) as "the state in which people are so involved in an activity that nothing else seems to matter". Supplementally, philomaths have argued that computer games could be more efficacious and

difficulties range from mild to astringent, and require instructional attention and sundry treatment methods. Some of the most prevalent math learning quandaries include: (a) arduousness memorizing fundamental number facts; (b) computational and arithmetic impuissance; (c) discombobulating about terminology and the indited symbolic notation system of school math; and (d) impotent understanding of concepts due to visual-spatial organization deficits (Garnett, 1998). Apart from lower performance in math exercises and tests, these math learning disabilities can withal result in avoidance deportment and negative perception of the particular subject.

Often, students with math learning difficulties exhibit high math apprehensiveness, which is defined as “a feeling of tension, apprehension, or fear that interferes with math performance” (Ashcraft, 2002). This math cognate quandary was first reported by Dreger and Aiken (1957), who descried that students demonstrated emotional reactions to arithmetic and mathematics. According to their study, math apprehensiveness is distinct from general solicitousness, not indispensably cognate to overall astuteness, and can contribute to poor performance in mathematics. These findings were substantiated and reinforced by more recent research (Richardson and Suinn, 1972; Tobias and Weissbrod, 1980; Wingfield and Meece, 1988; Ashcraft and Kirk, 2001), betokening that there is a negative correlation between math achievement and math solicitousness.

One of the most detrimental consequences of math solicitousness is that it can lead to unpropitious posture towards the particular subject, as well as negative self-perceptions about one’s math abilities (Ashcraft, 2002). Consequently, highly math-solicitous students additionally incline to evade enrollment in math-cognate courses, as well as pursuing degrees or vocation paths predicated on mathematical or quantitative skills (Hembree, 1990; LeFevre, Kulak and Heymans, 1992). Hence, the inculcator should endeavor to incorporate edifying methods that accentuate the value of mathematics, avail students develop their math skills, and increment their self-efficacy credences (Meece, Eccles and Wingfield, 1990). Moreover, it is of utmost consequentiality to avail students acquire a positive perception of mathematics, as this is considered to be highly cognate to lower math apprehensiveness and higher math achievement (Hembree, 1990). This could be achieved through the utilization of computer games, since they encompass many characteristics that make them valuable implements for the edifying process. More concretely, computer games promote active learning (Oblinger, 2004) and the development of sundry skills (McFarlane, Sparrowhawk and Heald, 2002), while they retain their regalement and appealing qualities (Kafai, 2001).

So far, efficacious utilization of computer games for edifying purposes has been reported in sundry subject areas, such as geography (Virvou, Katsionis and Manos, 2005; Tüzün et al., 2008), computer science (Papastergiou, 2008), health inculcation (Dorman, 1997), and mathematics and sciences (Klawe 1999; Annetta et al., 2009). According to Ke (2009), who conducted a meta-analysis with 89 empirical studies on instructional gaming, computer games can affect auspiciously students’ motivation and learning in a multitude of scholastic settings, both formal and informal. Adscitiously, as Hays (2005) points out, specially designed instructional computer games can be of inculcative value. Nevertheless, it should be noted that the majority of the subsisting empirical studies are inconsistently erratic due to divergent research, game, and learner variables, short-term experiments and interventions, and obscure descriptions of the games that were utilized (Ke, 2009).

# INSTIGATING AN ONLINE GAME AS MATHEMATICS LEARNING SUPPORT TOOL

Pathiratne, S.<sup>1</sup>

<sup>1</sup>Faculty of Computing, ESOF Metro Campus, Sri Lanka

## Abstract

*Mathematics inculcation should be a compulsory subject at any caliber in a school. Mathematics can broadly be defined as the science of understanding and apperceiving patterns and relegating them predicated on numbers or well defined mathematical structures. The cognition process of mathematics promotes one's analytical skills and critical cerebrating. Critical cerebrating is paramount to live a better life regardless of the nature of one's employment. This paper fixates on the design, Instigating and evaluation of an online game for elementary and middle school mathematics. Its aim is twofold: (a) the development of the prototype of a flexible and adaptable computer game, and (b) the evaluation of this prototype, as to its usability and technical aspects. The particular computer game was engendered in an endeavor to facilitate the edification of mathematics, a subject that is often regarded as perplexed by students of all ages. Apart from the game, an administration website was additionally constructed, so that the inculcator can configure the game, without that requiring any programming skills. More concretely, the edifier can utilize the administration website in order to alter several of the game's parameters, such as the content and total number of its questions. The game was evaluated in authentic school settings, both through a pilot study with 12 students and a long-term intervention with 37 students that lasted 14 weeks. The results designated that the students' opinion about the game was positive, and suggest that with some extensions the game could be utilized as an efficacious learning implement. Determinately, some corresponding conclusions and future amendments to the game are being discussed on the substructure of the findings.*

**Keywords:** 2D Digital Game Based Learning, Primary education, Secondary Education, Mathematics

## 1. INTRODUCTION

Mathematics inculcation should be a compulsory subject at any caliber in a school. Mathematics can broadly be defined as the science of understanding and apperceiving patterns and relegating them predicated on numbers or well defined mathematical structures. The cognition process of mathematics promotes one's analytical skills and critical cerebrating. Critical cerebrating is paramount to live a better life regardless of the nature of one's employment. The architect of the U.S. constitution, George Washington, was a Mathematician (Deshabandu J, 2014).

Research into the edification of mathematics has long demonstrated that math learning difficulties is a mundane and paramount quandary among students of all ages. According to Garnett (1998), many students face math learning quandaries of variants; these learning



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Reverse logistics can be done through the cross docking point. The empty glass bottles will be off loaded from the outbound trucks and then those trucks will be loaded with filled bottles. Then the empty bottles will be consolidated for larger shipments and transported to the main plant. When these empty glass bottles are received to the company, they are checked and monitored by security officers who work for the company. The defective bottles are rejected and deducted from the distributors. The security officer at the cross docking point will check and release the finished goods sent to the cross docking point and simultaneously receive the empty bottles after checking. Therefore checking and monitoring can be done at the cross docking point and the empty bottles can be transported to the company by the same truck which is used to deliver the finished goods to the cross docking point.

## **5. CONCLUSION**

This research was conducted to analyze the implementation of the supply chain concept of cross docking to CCBSL distribution process with the purpose of reducing the distribution cost. It is recommended to implement cross docking system to serve North & East regions for the purpose of reducing distribution cost as discussed above. Also the NPV value being positive confirms the feasibility of it. Simultaneously it will help to enhance the service level and the availability of products in both regions. It reduces the unnecessary truck movements thus saving time and energy. Further it helps to reduce the carbon foot print. Additional it can be concluded that by concerning other facts which include the ease of access, truck waiting time, held-up cost, distributors in the Central and North & Eastern Regions can be selected to be served through the proposed cross docking point, though the difference in the cost per case between previous scenario and new scenario is negative. The reason is most of them are collection customers who send their own vehicles to collect their shipments. It is because when they come to Colombo to collect the shipment, they will have to waste more time and have to wait for longer time durations at the Coca Cola premises to receive their load which increase the holdup cost. Therefore it would be more advantageous to serve those customers via the proposed cross docking point.

Further research can be under taken to identify new locations which can serve as new cross docking points. The time saving and fuel saving of the strategy when used for the Central region can also be proposed as further research to be conducted. The type of cross docking to be used can also be recommended for further research.

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The cross docking point is established in Galkulama in a 5 acre land owned by the company. The distances and the respective transportation cost from the proposed cross docking point (Galkulama) to each and every distribution points located in the Central and North & East regions was calculated. Then the distributors that can be served through the cross docking point were identified. As the distance to Galkulama from the company is not changing, the transport cost from company to cross docking point is constant. Therefore according to the current market rate, cost per case would be Rs. 40. This Rs.40 should be added to the cost per case from Galkulama to destination.

$$\text{Proposed Cost/case} = \text{Cost/case from Galkulama to Destination} + \text{Rs. 40} \quad (1)$$

As the next step, the current transportation cost per case to each distribution point is compared against the transportations cost per case via the proposed cross docking point. The summary of cost for the north, east and central regions are depicted in Table 2.

**Table 2. Summary of cost with cross docking**

Average cases per month	159,080
Transportation cost according to current Mileage Master	Rs. 11,504,501
Total transportation cost from Colombo to each destinations via Galkulama	Rs. 10,469,339
Expected Monthly saving	Rs. 1,035,162
Expected Annual saving	Rs. 12,421,944

Therefore overall a saving of Rs. 12,421,944 can be made by implementing the concept of cross docking.

In order to consider which customer should be exactly served through the cross docking point, the difference between the current cost per case and proposed cost per case has to be compared. If the difference is positive, they are the ideal customers who should be served through the proposed cross docking point. If the difference is negative, it shows that the current procedure is cost effective than the proposed method. According to that most of the distribution points in central region are not cost effective as most of them have negative differences. Therefore the proposed strategy is not suitable for distribution in the central region. For east and north regions most of the values are positive therefore the strategy is feasible. Sixteen distributors who can be served through the cross docking point has been identified and identified that the expected monthly saving is around one million rupees, therefore it is 12 million rupees per annum.

Next the cost benefit analysis is done by calculating the Net Present Value (NPV) and the profitability index. It is assumed that the to build a 75m long and 40m width fully facilitated cross docking platform with 8 dock doors (4 In-Doors and 4 Out-Doors), it will cost around Rs. 14 million according to current market rates. Therefore within one year and two months, company will be able to gain the invested money for establishing the cross docking point (assuming that the same and identical profit is gained every year). According to Central Bank, current bank loan interest rate is 16.5%. Based on that NPV is positive with a value of 13,669,880. The profitability index is 0.976. Therefore the strategy of using cross docking can be recommended to be implemented.

potential areas, current locations, geographical boundaries they have to operate, distance from the centralized warehouse (Biyagama) were obtained. It is necessary to collect the data regarding the transportation cost of each distributor, when transporting finished goods from Biyagama to their location and empties from their points to Biyagama (reverse logistics). These data was obtained from SAP and Haulage Invoices used by the logistics department. All transportation costs are borne by the company. Next data on the types of transporters used by the company and the basis of payment were obtained: some are paid monthly fixed amount, some of them are paid according to the number of cases they transport and some of them are paid according to a specific rates based on the distance they travel and the quantity they transport. There are few distributors from North, who have their own vehicles to collect their shipment and they are entitled to receive a case price incentive which others do not receive. This is because of the distance they have to travel. It is necessary to identify those distributors. This data was collected from ‘Sales Report’ of sales department. In order to implement the concept of cross docking, a cross docking point has to be constructed. Construction cost is a fixed cost, but it should be estimated by considering the current market cost of building such a facility. This estimated cost was obtained from a building contractor recommended by the Coca Cola Company. Next the ‘Pre-implement cost’ and ‘Post-implement cost’ were calculated. A Cost-Benefit Analysis was done to analyses in depth the benefits of implementing the concept of cross docking and the Pay Back Period and Net Profit Value (NPV) was calculated for the analysis.

## **4.FINDINGS AND DISCUSSION**

### **4.1 Methods of payment**

At present The Coca Cola Beverages Sri Lanka Limited involves In-Plant and centralized warehouse system. Therefore entire distribution is taken place from the centralized warehouse. For the purpose of delivering finished goods to particular destinations basically they use two types of trucks. One is rented trucks which are paid on monthly basis based on the capacity of the truck. Second type is normal delivery trucks which are paid based on Mileage Master which has been developed by The Coca Cola Beverages Sri Lanka by considering the fuel component, labour component and W&T (Wear and Tear) component. Normally labour and W&T components are considered as constant components.

### **4.2 Current cost and findings**

This research analyzes the impacts of implementing a cross docking system for reducing distribution cost of central, north and east regions. Transportation cost is calculated according to the Mileage Master. The number of cases that is transported is multiplied by the particular rate given by the Mileage Master based on the distance travel. The summary of costs for year 2012 and 2013 is given in Table 1.

**Table 1. Summary of cost tracking before cross docking**

<b>Region</b>	<b>Year</b>	<b>Cost (Rs)</b>
Transportation cost for Central Region	2012	1,854,681
	2013	2,105,557
Transportation cost for North & Eastern Region	2012	10,537,274
	2013	10,847,918

among those factors under different circumstances. Secondly it focuses on the availability of the goods at the retail stores under different network configurations. It focuses on three types of distribution models, namely, Traditional Storage Distribution where retailers hold stocks at warehouses, Pre Allocated Cross docking (Pre C), where orders are allocated based on the demand at retailers and Post Allocated Cross Docking (Post C), where orders are allocated based on the demand at supplier.

(Vasiljevic, Stepanovic, & Manojlovic, 2013) shows the benefits that can be gained through cross docking by using a real world case study of a leading super market chain in Serbia. Distance travel, fuel consumption, time spend for touring, number of tours, number of pallets transported, vehicle maintenance cost, lease cost have been taken as indicators for the case study. Finally it shows the saving that can be derived by implementing the cross docking through cost analysis. Therefore this study too uses the cost benefit analysis method. (Saddle Creek Corporation, 2011), through the report of cross docking trend, discusses about the benefits that can be achieved from the cross docking concept. Improving service level, reducing transportation cost, consolidating shipments to the destinations, quick to market, reducing warehouse costs such as carrying cost, space cost are some of the benefits discussed. (Vis et al; 2008) discusses about the internal situation of the cross docking centre. It identifies the external factors that affect the operation of the cross docking centre; reliable supply with short lead time, availability of information through the entire supply chain, arriving and departing of products and trucks on time.

Therefore it can be seen that cross docking is a concept which has gained high interest in other countries but has not been focused much by research in Sri Lanka. Hence this study will assist to bridge this research gap.

Furthermore, cross docking and reverse logistics are two different concepts. Therefore cross docking associated with reverse logistics is quite a new concept. Most of the western countries engage in cross docking and reverse logistics separately, but not simultaneously. As a result of that there is lack of such knowledge and this research attempts to integrate both cross docking and reverse logistic part into one frame.

### **3. METHODOLOGY**

There are no companies of the same category who have implemented cross docking in their distribution strategy. Ceylon Breweries PLC has implemented cross docking for the distribution of their alcoholic products. Therefore relevant personnel from Ceylon Breweries PLC was interviewed to collect information to understand how they have implemented the cross docking concept and how benefits are derived. This research analyses the potentials of implementing cross docking system to CCBSL as a mean of reducing unnecessary loss. Implementation of cross docking system to West A and West B is unnecessary because all the distribution points in Western division are at close proximity to the central warehouse in Biyagama and to a certain extent the concept of cross docking is done. In Southern Region the number of distributors is less, therefore locating a cross docking point in an intermediate point is worthless (RTM Report 2013). Therefore the potential regions considered are the Northern, Eastern and Central divisions.

Secondary data was mainly used for the study which was obtained from organisational sources. First the scattering of distributors among these regions was identified through data available in Route To Market (RTM) Report. Data on all the distributors scattered in the

rearranged and then loaded into the shipping trucks for delivery to distributors. By using this new supply chain concept, the transportation cost can be reduced and storage space can be reduced. This cross docking system is widely used by the companies in European and western countries. The best example is Wal-Mart which receives the maximum benefits from cross docking. Wal-Mart is the leader of the super market chain in the US. They can offer Everyday Low Price (EDLP) to their customers. The ability of offering such a big bonanza to their customers is achieved through cross docking. By implementing it, they were able to reduce their transportation cost and that saving is offered to their customers. Their outlets are linked with a centralized point. Therefore once a particular item is sold, from their outlet, that information is transferred to that centralized point. When the available stock is reached to certain point which is called re-order level or re-order point, full truck load of particular goods is sent to the cross docking point and shipping trucks from outlets come and collect their order. Not only the lowest price, but they have also achieved comparatively higher service levels through cross docking than their competitors.

This concept has been implemented to coke products in other countries such as the US. The tendency towards this concept by Asian countries is very low. Vietnam is the only Asian country that has implemented a cross docking system for distribution of coke products (Coke Magazine, n.d).

Therefore this study analyses the feasibility of implementing a cross docking system to CCBSL. By implementing this a considerable sum of saving and gain could be achieved. It will be a benefit to outperform other Asian countries which manufactures coke products.

### **1.3 Objectives of the study**

The objectives of the study were to identify the transportation cost under prevailing direct shipment system and the annual cost that the company has to bear due to distance incentives given to distributors from long distance areas, to identify the feasibility of using cross docking for distribution and to incorporate reverse logistics with the cross docking process.

## **2. LITERATURE REVIEW**

In global industrial context cross docking has been utilized efficiently as a means of reducing distribution cost and used as an efficient method of delivery of finished goods (Kulwicz, 2004) discusses different types of cross docking opportunities available in the supply chain. Further he describes when to apply cross docking and when not to apply cross docking. According to (Kulwicz, 2004), back-ordered items, seasonal (or promotional) goods, high-volume products in steady demand, high-value products, products having short lead times are suitable for cross docking. Further bulky, awkward items that are difficult to handle, items arriving before seasonal promotions begin, slow-moving items, low-value products, items purchased in large bulk quantities, products having long lead times are not generally suitable for cross docking. (Kulwicz, 2004) points out the availability of modern techniques available in the market such as Radio Frequency Identification Device (RFID) and bar code scanning that can be effectively applied for the cross docking operation. Integration of Information Technology based systems to the operations of cross docking derives a lot of opportunities such as avoiding out of stock situations, customer satisfaction, availability, service level etc. (Kulwicz, 2004). Reducing transportation cost is one of the main concerns in implementing cross docking system. (Wesche, 2012) addresses the impact on moving from traditional supply chain distribution to cross docking system. The study is based on two main aspects. One is to identify main factors that will change when moving to cross docking and interaction

## **1.1 Current distribution practices**

Concentrates are manufactured in the mother company and are distributed to all the bottling plants which are located around the world. Further the finished products should reach to the end consumer from those bottling plants. These distribution networks should be operated effectively for the success of the company. Therefore distribution can be considered as the integral part of coca cola's supply chain.

Every distribution strategy is not suitable for every country because of differences among them. Hence it is the responsibility of the management of a particular franchised partner to understand and implement the best strategy for their distribution. The Coca Cola Company has two major methods of distribution of their products to the customers. One is direct selling, where the finished products are directly delivered to the retail outlet. Other method is indirect selling, where the finished products are sold to distributors or agencies and they deliver those products within their territory. If the area which has to be covered by the particular bottling plant is less, then direct selling is effective, but if the territory they have to cover is wide spread the ideal solution is the second method. Almost all bottlers use the combination of these two strategies in their daily operations.

Coca Cola Beverages Sri Lanka Limited has two types of customers. One is called collection customers and other one is delivery customers. Collection customers have their own vehicles to collect their load. Delivery customers don't have their own trucks or lorries to collect their load. These customers are catered by company owned delivery trucks. Once the order is placed by the customer, a vehicle is arranged and delivered to that particular customer. Modern trades such as Mc Donald's, Cargills, Keells, Perera & Sons and schools are treated as delivery customers.

CCBSL has divided Sri Lanka into five regions namely West A, West B, South, Central and North & East for sales and operational efficiency. The transportation cost of drinks from the in-plant centralized warehouse which is situated in Biyagama to the particular distribution point is paid to the particular transport provider by the company. These payments are calculated according to specific rates which is called 'Mileage Master' or per case rate. The collection customers who send their own vehicles to collect their load of drinks are entitled to receive payments for transportation. Especially collection customers who come from faraway places to Colombo such as Jaffna, Kilinochhi, receive case incentives that other distributors aren't entitled to obtain. Paying transportation cost and offering case incentives to those distributors is a loss to the company. Therefore this unnecessary cost could be reduced. Further other additional benefits could be achieved.

## **1.2 The concept of cross docking**

"Cross docking is a logistics procedure where products from a supplier or manufacturing plant are distributed directly to a customer or retail chain with marginal to no handling or storage time. Cross docking takes place in a distribution docking terminal; usually consisting of trucks and dock doors on two (inbound and outbound) sides with minimal storage space. The name 'cross docking' explains the process of receiving products through an inbound dock and then transferring them across the dock to the outbound transportation dock (adaptalift, n.d.). Cross docking is an intermediate transit point where no or zero inventory is maintained. The goods are sent out to the cross docking point from the manufacturing plant or central warehouse, using delivery trucks and at the cross docking point, they are sorted and



# IMPLEMENTATION OF A CROSS DOCKING SYSTEM TO COCA COLA BEVERAGES SRI LANKA

Sanjeeva, H.K.A.C.<sup>1</sup> and Ratnajeewa, D.R.<sup>2</sup>

<sup>1</sup>*CINEC Campus, Sri Lanka*

<sup>2</sup>*Kotelawala Defence University, Sri Lanka*

## Abstract

*The Coca Cola Beverages Sri Lanka Limited is a leading multinational carbonated soft drink manufacturer in Sri Lanka. It is involved in almost the entire supply chain process; from manufacturing to distribution. Therefore use of proper supply chain management practices is essential. Warehousing and distribution which is a main part of the supply chain plays a vital role in its operation. Since all the finished goods have to be delivered to distributors around the country, its transportation cost is considerably high. The aim of this research is to reduce transportation cost by implementing the supply chain management concept of cross docking. Secondary data collected from company records and systems were used for the analysis. The current transportation cost and the transportation cost through the cross docking center is calculated and analysed through a comparison. Then a cost benefit analysis is done to analyse the feasibility. Through the analysis it is concluded that it is feasible to use the concept of cross docking and many additional benefits which include time saving, better service levels and reduction of contribution to the carbon foot print. Finally recommendations are given to establish and carry out the cross docking operations.*

**Keywords:** Supply chain management, Cross docking, Distribution, Beverages, Reverse logistics

## 1. INTRODUCTION

Coca Cola, is said to be the second most popular word in the world. It is very difficult to find a person who doesn't know about coca cola. This famous product comes to the customers' hand as a result of a combination of number of companies or plants located all around the world. The Coca Cola Company involves in manufacturing of non-alcoholic carbonated soft drink. They are the world largest beverage company which supplies more than 500 products over more than 200 countries. It is recorded that the consumption rate of coke products is more than 1.8 billion servings per day. This led Coca Cola to become the most valued brand name in the world. The Coca Cola Company engages in franchise business. There are more than 200 bottling plants around the world and together with their bottling partners they have offered more than 700,000 job opportunities.

Coca Cola Beverages Sri Lanka Limited (CCBSL) is located in Tekkawatta, Biyagama. Currently it manufactures more than 50 varieties of coke products and sells over 10 million unit cases per annum.

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researcher observed that almost all the dimensions of EO were in practice at ABC except for the autonomy dimension which was only practiced given the presence of high capability in bringing business turnarounds that can outperform the competitors or set benchmarks in the industry. All in all the initiatives taken to foster innovativeness were quite rigorous than that of taken towards autonomy. However, it is recommended that adoption of green practices to its operations and promoting it would be more fruitful as many tourists visiting Sri Lanka from around the world are now inclined towards having their leisure time at hotels practicing environmental friendly initiatives. This kind of environmental friendly and green practices were in the process of Aitken Spence Hotels (Aitken Spence Holdings PLC, 2013/14) in Sri Lanka where they claimed to have gained attraction of tourists in to their hotels and having them come to enjoy leisure time. All in all as per the researcher's knowledge it is good to move towards environmental sustainability initiatives so that it can foster rebranding its name across the world. As per the studies, (Lumpkin & Dess, 1996), fairly high autonomy has evidently underpinned business expansions by means of bringing novelties to the ground. As such ABC also can support autonomous actions more and more directed towards business turnarounds i.e. encouraging middle level managers to exercise their expertise with limited restrictions. However, the researcher identified that EO dimensions were present at ABC.

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dimension at ABC, one manager said “*I see ABC as the trendsetter in hospitality segment*” to become the industry leader and this is in line with the (Covin & Slevin , 1989b, Miller D. , 1983) study conducted where they asked the managers as to if the firm has a tendency to lead rather than follow in the progress of new procedures and technologies and the introduction of new products or services. Thus, this question received answer mentioned above and it is possible to conclude that ABC is in the process of practicing proactiveness as one of the dimensions of EO. ABC is also in the process of rebranding its name to a new one where it expects to bring almost all the hotels’ name under the same name to make it easy for the visitors and tourists to remember. This decision is consistent with Venkatraman’, 1989, notion where he mentioned proactiveness can take the form of brands ahead of intense competition.

#### **4.5. Competitive Aggressiveness**

In the competitive aggressiveness dimension, ABC has taken several measures where it brought an expansion of the number of rooms in its hotel by three hundred more ahead of the competition and this was consistent with the notion by Venkatraman who defined competitive aggressiveness as aggressively spending product, marketing and etc. At the same time providing high value added product experience such as travelling coupled with luxury tour destination solution is consistent with the notion by Woo & Cooper , 1981. This is also consistent with Cooper & Dunkelburge, 1986, who emphasized doing things unconventional and different from that of competitors as competitive aggressiveness.

### **5. IMPLICATIONS FOR RESEARCH AND PRACTICE**

This section of the study provides implications for further research and studies. Though the study examined as to if EO dimensions were present at ABC, a critical concern exists where it was hard to distinguish between effective strategic management initiatives and measurement associated with entrepreneurial orientation for, upper and middle level management did not see the decisions made from entrepreneurial point of view. This study examined one critical aspect of entrepreneurship; that is, entrepreneurial orientation construct and this distinguishes from the concept of new entry or new organization concept by (Gartner, 1988). However, EO dimensions at ABC captured through the interview had with managers and annual report published by the hotel chain whereas other variables such as organizational and environmental factors were not taken in to consideration, which can have direct or indirect influence to the adoption of EO construct. Thus, it is important to consider these factors in to further studies to give more accurate and detailed information about performance EO relationship at hotel chain. Moreover, relationship between EO and other variables such as strategy making and macro environmental variables that determine performance of hotel chain is yet another area for further studies. Researcher would like to encourage Srilankan or any other national to do explore application and the nature of application in multi dimensionality of EO construct at firm level among the other companies in Sri Lanka. Comparison of application in multidimensionality of EO construct between industries can also be a promising area to do studies on. Research to explore underlying measurements and processes associated with entrepreneurial activity and what underpins EO construct at firm level in Sri Lanka can be suggested for further research.

### **6. CONCLUSION AND RECOMMENDATION**

Exploring EO dimensions at firm level has become a timely phenomenon. Thus, (a) identifying as to if EO dimensions are in practice at ABC was the primary goal in order to clarify practicality involved in applying EO dimensions at firm level in Sri Lanka. The

The level of expenses incurred and the number of resources allocated for research and development represent the firm's involvement and tendency towards innovation activities. From human resource perspective in innovation fostering, (Hage. J , 1980) argued that more professional and specialist in the firm i.e. professionals like engineers and scientists, the higher level of innovations. Innovation dimension with regard to the above argument at John keels hotels plc is more of the adoption of the same thing as it is where most of the managerial level employees are professionals either in engineering (Manager, 2014) or related fields.

Miller & Friesen, 1982b; Covin & Slevin , 1989b argued innovativeness from marketing perspective and highlighting the number of new product or service introductions and the rate of changes in services or product lines. With regard to the notion product line at ABC, came across earlier in the study at the dimension autonomy. However, one executive manager said that constant commitment to bringing novel ideas to delight the customers at ABC is engraved in the minds of the employees at all levels of the hotel chain.

As per the discussion with one manager at ABC that mentioned it is at its innovation stage where it rebrands its hotel chain to a different name with contemporary Srilankan tag. Also it claims with the belief that the rebranding gives more of an image for the youth and young asians with a feeling of youthfulness as much as possible.

### **4.3 Risk Taking**

The method adopted in measuring the risk taking at ABC was quite similar to that of Venkatraman's and found out from the responses by the managerial level employee that the acquisition of a leading hotel, one of the five star hotels in Colombo city, was a risky decision with a long-term possible payoff. However, the decision to acquire the hotel was based on calculated risk where the operations were redesigned to intensify the gainings through attracting more and more customers in to the hotel via linking walkers tours', luxury tours destination solutions. Thus, that riskiness involved in acquiring Oberoi hotel was mitigated to fairly a reasonable level. Here the decision to acquiring the Oberoi hotel was a collective decision after a series of board meetings and other discussions with consultants. ABC adopted the similar model at the decision to acquire yet another hotel, five star, located in Colombo city. Yet the risk in doing so was fairly higher than any other decision made before given that was already incurring losses at the time of acquisition. However, this exemplified literally how risk taking was practiced as one critical dimension of EO ABC. However, it is also noteworthy to mention that the hotel is now a profit making hotel under the ABC.

### **4.4 Proactiveness**

Finally, this sections with regard to proactiveness joins how proactiveness was related to ABC. As one of the brave initiatives and proactive measurements, ABC moved its operations to Maldives to capitalize on new market structure available and this is similar to the notion by Lumpkin & Dess, 1996, where they highlighted proactiveness is closely related to innovativeness and is likely to covary with it. Expansion of operation to Maldives corresponds to the dimension "innovativeness" where it deals with capturing new market or venue to do advertising. This was argued to be one angle in innovativeness by Downs & Mohr, 1976 in their seminal work. Thus, this brings out that ABC is in the process of adopting proactiveness in their firm and practicing EO at firm level. This decision to expand operations to new markets were underpinned with the careful examinations by the management team and they were supported by the inherent culture at ABC. Considering proactiveness

relationship suggested by (S, Yousaf Sai, & Engelen, 2014) and cited by (Dissanayaka & Semasinghe, 2015). Further he found in his study of 317 entrepreneurs in Sri Lanka that the degree of dependence of employees (i.e. power distance) affects the effective utilization of entrepreneurial strategy (i.e. EO) generating positive implications to the business. Where in the case of ABC, the lower level stewards have been vested with the power to render the best possible service they could with no intervention by the senior supervisors or managers in the absence of breach of code of ethics and conducts. Even the lower level employees are encouraged to propose creative and innovative ideas to nurture the service for better from where it is now and rewarded for the best idea proposed followed by rapid promotions in their job. These moves are intended to strengthen autonomy at operational level and intensify performance through creativity and innovations brought forward by employees even at operational levels. (Pinchot, 1985) As a result of the measurements to foster autonomy at ABC, it has been found in the employee satisfaction survey at ABC that employees are delighted and feel belongingness to the group (ABC Holdings plc, 2014). Contentment of the employees enables to generate a strong and a positive outlook for J K Hotels plc in the future as well (ABC Holdings plc, 2014). where the autonomy at ABC Hotels was observed where a group of individuals proposing a massive and growing major city and its main building project “UP front integrated resort”, hypothetical name, there by being able to generate significant amount of profit in the years to come (Manager, 2014) associated with more and more expansion of the business to various spheres in the domain

## **4.2 Innovativeness**

This method of innovativeness practiced at ABC was that has established a Research & Development center to encourage innovation through novel ideas and acknowledgement and execution of suggestions made by individuals at the grass root level in the hierarchy as long as they address the innovation landscape in gaining competitive edge over the rivals.

Moreover, ABC promotes its leisure activities via mega scale advertising campaigns, unprecedented customer offers from time to time via price slashes, unique product offers such as experience and excursion where walking tours, one of the ABC holding’s owned travel & tour guide service provider, provides a unique exposure to the tourists by enabling them to pluck tea cultivated in the hill country, Sri Lanka. This exposure on offer is embraced by more and more tourists and have attracted thousands of tourist arrival in the island and in to the hotel as per the reveals in the report.

Additionally, annual report of ABC reveals that offering a wide range of leisure solutions such as beach tours, wildlife and adventure, cultural tours, hill country tours, luxury tours have made ABC unique and placed in the first choice among the tourists visiting Sri Lanka. Thus the profit of the hotel chain rose to Rs. 1.5 billion in the year 2014 from Rs. 1.2 billion in the year 2013. However, one manager said that ABC expects to continue innovations in the future as well.

Further innovativeness emphasizes in the broadest sense, innovativeness may occur along a range of landscapes from a simple disposition to either try a new product line, as in the earlier case by ABC hotels, or experiment with a new advertising venue, to a passionate commitment to master the latest in new products at different markets (Lumpkin & Dess, 1996)’ Adoption of this landscape of innovativeness at ABC is possible to observe where it is inclined towards shifting their promotions about leisure activities to India and East Asian countries from European countries as per the discussion with the manager at ABC.



his study concluding competitive aggressiveness explained more than a percentage of 37 variance in corporate entrepreneurship than did any other variable considered in the study. Providing an extension to the competitive aggressiveness, that it takes several forms (Covin & Covin, 1990) asked managers as to if they adopted very competitive, undo the competitor, posture or “live and let live” posture. Moreover, the corresponding activities for undoing competitors took the shape of setting ambitious market share goals and taking bold actions to achieve them. As per Venkatraman, 1989 highlighted such actions as cutting prices and sacrificing profit or spending aggressively on marketing, product or service and the quality compared to that of competitors’ were important. Camp & Miller, 1985, found that most successful ventures were those that did not shy away from broadly defined markets. The markets were defined as the number of markets, sizes and the types of customers.

### **3. METHODOLOGY**

This section of the study explains the methodology adopted. The case study focused its attention to discuss practical application of EO at ABC hotels plc. Herein afterward (ABC), a subsidiary in one of the top ten public limited companies (ABC Holdings PLC) listed in the share market of Sri Lanka. This study is presented as a case study concerned with identifying EO dimensions, if present, at ABC and trying to connect it with theories and practice. The study is based on qualitative research method where the researcher collected primary data for the study asking face to face questions from managerial level employees. Moreover, interview was conducted using a worldwide accepted questionnaire with regard to corporate entrepreneurship which is given as an annexure in the article. Additionally, secondary data for the study were from annual reports of the company, website. Further, what is mentioned in the annual reports and the answers provided by the interviewees were observed consistent. The advantage of the case study method over the other is that it tries to bring comprehensive and detailed full notes with analysis provided by the researcher (Tiwari & Saxena, 2012). However, the researcher observed a limitation that the managers were little hesitant to reveal some information with regard to autonomy. Moreover, the management did not know that the initiatives from EO dimension.

### **4. ANALYSIS AND DISCUSSION**

This section of the study provides the analysis to the study done on descriptive basis. This provides as to how the initiatives were made from entrepreneurial perspective though not known by managers and the directors of the company as entrepreneurial orientation. The researcher delicately tried to connect the decisions and initiatives from entrepreneurial orientation point of view. The Analysis are based on the answers provided by the managers at executive level. Analysis is provided each by each separately from the dimensions.

#### **4.1 Autonomy**

“Centralized vision and strong leadership” This kind of autonomy, which is considered to be autocratic (Shrivastav & Grant, 1985) cannot be seen at ABC though entirely autonomous or individualistic decision making is not allowed at all times either unless it is of a decision which brings about business turnarounds (Manager, 2014) as decision making or ideas can have high level of ramifications in the long run though not seen in the short-run.

To foster entrepreneurship at firm level, many large scale firms have engaged in promoting intrapreneurship (Pinchot, 1985) by way of flattening hierarchies, changes in organizational structures, and delegating authority to operation level groups and individuals. This kind of low power distance in decision making can strengthen autonomy and thus EO performance

proactive firm is a leader rather than a follower as it has will and capture new opportunities even if it is not the first to do so. Providing an extension to the definition of proactiveness, Lumpkin & Dess, 1996 referred it "how a firm relates to market opportunities on its way to new entry and it does so by seizing initiative and acting opportunistically in order to "shape the environment," that is, to influence trends and, perhaps, even create demand. As per (Chen & Hambrick , 1995), proactiveness refers to taking the initiative in an effort to shape the environment to one's own advantage. Thus EO involves proactiveness as one of the dimensions pursuing opportunities in the market place to exploit them followed by economic sustainability. This was practiced by IBM as per (Cooper, Willard, & Woo, 1986) studied, IBM had introduced a new product just as they were entering proactively to the large CPU market with faster and lighter machine to respond the request by the investors to secure an additional sixteen million to upgrade the business.

In operationalizing proactiveness at firm level, the researchers (Covin & Slevin , 1989b, Miller D. , 1983) have asked the question from the managers as to firm's tendency to lead rather than follow in the progress of new procedures and technologies and the introduction of new products or services as proactiveness proposes a tendency towards initiating activities. Proactiveness is closely related to innovativeness and is likely to covary with it, similar to the case of new-product introductions (Lumpkin & Dess, 1996). Moreover, the products and services that firms proactively bring to the market also may be imitative or reflect low innovativeness. This may be the case, for example, when a firm enters a foreign market with products that are tried-and-true in domestic markets, but uniquely meet unfilled demand in an untapped market.

## **2.5 Competitive aggressiveness**

Competitive aggressiveness though not received much emphasis in the literatures back in time refers to a firm's tendency to directly and intensely challenge its competitors to achieve entry or improve position, that is, to outpace industry rivals in the marketplace (Lumpkin & Dess, 1996).

However, (Stinchcombe, 1965) argued that young firms are mostly less likely to the liability of newness. Thus, they must take steps to establish legitimacy and power relative to suppliers, customers, and other competitors. Many scholars such as MacMillan & Porter, 1985 have argued that an aggressive stance and intense competition are critical to the survival and success of new entrants because new ventures are much more likely to fail than established businesses due to various reasons. Chiefly, competitive aggressiveness may be recognized by responsiveness, taking the form of head to head confrontation or reactive i.e. slashing the price in responsive to a competitor's corresponding action, willingness to be unconventional and other competitive aggressiveness available to new entrants would be adopting unconventional to challenge industry leaders (Cooper & Dunkelburge, 1986), focusing on high value-added products while carefully monitoring discretionary expenses (Woo & Cooper , 1981), and analyzing and targeting competitors' weaknesses (MacMillan & Jones, 1984). Corresponding to the above phenomenon (Porter, 1985) also recommended three ways for aggressively pursuing existing firms: reconfiguration; changing the context which is redefining the product or service and its market channels or scope and outspending the industry leader. Therefore, Lumpkin & Dess , 1996 highlighted competitive aggressiveness referring to firm's responsiveness directed towards achieving competitive advantage, as an imperative element in EO. This was furthered as an important component by Dean, 1993 in

is consonant with the notion of heavy commitments of resources and high leverage from borrowing. Therefore, firms with entrepreneurial orientation are typified by risk taking behavior i.e. making large resource commitments and incurring heavy debt with the speculation of obtaining high returns by capitalizing on the opportunities in the market place. Lumpkin & Dess, 1996, p. 144 argued that all business endeavors involve some degree of risk. However, most studies on entrepreneurially related risk taking looked in to individuals rather than firms though at the level of the firm, risks are taken that would not be taken by a firm member on his discretion.

Most importantly, measuring and investigating risk taking at firm level remains rather untouched so that inducing scholars and practitioners to lay their hands on which. However, well accepted and widely used scale by Miller D. , 1983 managers' readiness for bold versus cautious acts to achieve firm objectives. Similarly, Venkatraman, 1989, also used a similar approach, asking managers the extent to which they adopted tried and true path or leaned towards supporting only projects of which returns were certain.

## **2.4 Proactiveness**

In Webster's Ninth New Collegiate Dictionary 1991, p. 937, proactiveness is defined as "acting in anticipation of future problems, needs, or changes." As an initial definition from an entrepreneurial perspective, Miller & Friesen, 1978a pointed out that the proactiveness to be present by shaping the environment by means of introducing new products, technologies and administrative techniques Later, proactiveness was used to demonstrate a firm that was the first to introduce new products or services and quickest to innovate. This is further highlighted by Miller's description (Miller D. , 1983) of an entrepreneurial firm as one which is "first to come up with 'proactive' innovations".

However, Penrose , 1959 argued that managers with entrepreneurial capabilities are of much important to the growth of the firm as they provide with vision and imagination needed for the business to opportunistic expansion.

Lieber & Montgomery, 1988, highlighted the importance of capitalizing on first-mover advantage as the best strategy for making the most of on a market opportunity by exploiting on available opportunities yet untapped by anybody else in the marketplace, the first mover can make unusually high profits and get a head start on establishing brand recognition in the first place thus position itself as the leader in the market. Given this, taking initiatives in anticipation of the future prospects in the market place and of the profits has become one of the dimensions in corporate entrepreneurship where the small as well as large scale firms exploit promising opportunities in the market place and capitalize on them (John Keells Hotels plc, 2014). As such, proactiveness has become associated with EO as it is about looking ahead via constant innovation and new venture activities in anticipation of furthering opportunistic growth in the marketplace.

However, the idea of acting in anticipation of future growth and demand was challenged by (Miller & Camp, 1985) in their seminal work claiming that a firm can be novel, forward thinking and fast without always being the first mover. This was proven by the study of eighty four SBUs, where they found the second firm to enter the market was as pioneering as the first. Moreover, Venkatraman, 1989, argued introduction of new products or services and etc. and brands ahead of intense competition, strategically eliminating operations which are in the mature or declining stages of life cycle" as constituencies in proactiveness. Therefore, a

Generally, it deals with the ability and will to be self-directed in the pursuit of opportunities. Thus, in the Srilankan context of opportunity phenomena opens an avenue for luxurious apartment in the suburb such as Colombo (Central Bank of Sri Lanka, 2014).

## **2.2 Innovativeness**

“Innovation plays rather a distinctive and critical role in entrepreneurial process” emphasized by Schumpeter, 1934, 1942b and he was among the first to come up with the idea to highlight the importance of innovation as the economic process of “creative destruction” (1942) by which wealth was created. This is done by new entrants via shifting resources from existing firms to them in the market structures. Chiefly, this destruction was made possible by introduction of new goods and services to the market thus resource allocation was inclined towards new introduction in the market. The key to this destructive cycle was innovativeness and became an important factor to characterize entrepreneurship.

Firm’s inclination towards the engagement in supporting new ideas, novelty, creative processes and experimentation that may result in new products, services and technological processes is furthered as innovativeness. Innovativeness can vary in its degree of radicalness (Hage, 1980) given the context. Innovativeness displays a basic willingness to depart from existing technologies and processes to encourage novel state of art technologies and processes (Kimberly, 1981) providing an extra edge over rivals.

Among the most of the methods to classify innovativeness, Downs & Mohr, 1976, perhaps the most useful and applicable and distinctive method is between product market innovation and technological innovation. In most cases researches have focused on technological innovations i.e. product and process development, research and engineering and an emphasis on technical expertise and industry knowledge (Cooper, 1971), (Maidique & Patch , 1982). An emphasis on product design, market research, and advertising and promotion has been the Product-market innovativeness as per (Miller & Friesen, 1978a).

## **2.3 Risk taking**

Early entrepreneurship studies focused its attention towards and tried to equalize the idea of entrepreneurship as working for oneself that is as per Cantillon 1734, willingness to be self-employed rather than working for someone else for wages associated with assuming personal risk in venturing. Cantillon , 1734 was the first one to use the word entrepreneurship in more formal angle and argued that the principal factor separating entrepreneurs from hired employees was riskiness and uncertainty involved in self-employment. The most critical and crucial factor that defined entrepreneurship is personal risk taking ever since it came to be in practice.

Risk is a contextual phenomenon where depending on the context it is being applied it may vary. From the strategic point of view Baird & Thomas, 1985 highlighted three types of strategic risks i.e. “Venturing in to unknown”, “borrowing heavily” and “committing a relatively large portion of assets”.

Risk is used in the context of the familiar risk-return trade-off in financial analysis, where it refers specifically to the resultant probability of a loss or negative outcome in ventures. This is basically the definition that Miller and Friesen used when they framed risk taking as "the degree to which managers are willing to make large and risky resource commitments-i.e., those which have a fair chance of costly failures" (1983, p. 923) . The definition of risk taking

## **2. LITERATURE REVIEW**

### **2.1. Dimensions of Entrepreneurial orientation**

This section of the study explains about the studies done associated with EO dimensions and their application at different corporate ventures. Speaking EO at the firm level is correspondent to the model used in the work by (Covin & Slevin, 1991a), who emphasized the role of entrepreneurship as firm behavior. In the following scenario with regard to entrepreneurship as firm level behavior at ABC, the researcher used strategic business unit (SBUs), Hotel Chain, to illustrate EO concepts.

The study of a firm's EO is quite similar to (Stevenson & Jarillo, 1990) concept of entrepreneurial management, in that it reveals the firm's processes, methods, and styles that organizations use to act entrepreneurially. With respect to the specific dimensions of EO, (Miller D. , 1983) provided a useful turning point. He proposed that an entrepreneurial firm is one which "involved in product market innovation, undertakes somewhat risky ventures, and is the first to come up with 'proactive' innovations, beating competitors to the punch". Accordingly, he used the dimensions of "innovativeness," "risk taking," and "proactiveness" to characterize and test entrepreneurship. Covin & Slevin, 1989b investigated the performance of entrepreneurial firms in hostile and benign environments. In their study, 161 manufacturing firms were used in the study to measure entrepreneurial strategic posture using a scale that graded firms as entrepreneurial if they were risk taking, innovative, and proactive. The rest of the dimensions are vital aspects of EO. The first being competitive aggressiveness, which captures the unique idea of "beating competitors to the punch," proposed by (Miller D. , 1983), definition of an entrepreneurial firm. It refers to the type of intensity and head-to-head posturing that new entrants often need to compete with existing rivals.

Another key element of EO is the inclination towards independent or rather autonomous action. (Bird, 1988), (Katz & Gartner , 1988) emphasized that start-up firms must exercise intentionality to carry forward the specific actions required to launch new ventures. However, hierarchy of bureaucracy and organizational tradition hardly contribute to new-entry activities in existing firms (Kanter, 1983). Instead of that, it requires the exercise of independence or autonomy by strong leaders, unfettered teams or creative individuals who are not engaged from organizational constraints in leading to new entry. Burgelman, 1983 found that, in the case of internal corporate venturing, "The motor of corporate entrepreneurship resides in the autonomous strategic initiative of individuals at the operational levels in the organization." The next five sections explain the dimensions i.e. autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness.

### **2.2. Autonomy**

Entrepreneurship has prospered because independently minded people decided to leave secure positions so that they are able to promote novel ideas or venture into new markets, rather than allow organizational superiors and processes to impede them from bringing forth novelties (Lumpkin & Dess, 1996). Within organizations also, it is the freedom vested to individuals and teams who can apply their creativity and champion promising ideas that is needed for entrepreneurship to occur. Thus autonomy is considered to be a strong impetus of entrepreneurship and has become a key dimension in EO.

Autonomy refers to the self-determining action of an individual or a team in bringing about an idea or a vision and carrying it through to completion (Lumpkin & Gregory, 1996).

group creating new combinations either on their own or attached to existing organizations (Lumpkin & Dess, 1996) , (Pass, Lowes, Davies, & Kronish, 1991) and this was also reflected in the writing by (Covin & Slevin, 1991a).

(Lumpkin & Dess, 1996) argued three entrepreneurial postures namely risk taking, innovativeness and proactiveness, introduced by (Miller D. , 1983, 29,7) can be applied to corporate processes and as well as to new ventures. As per (Burgelman, 1983) defined, corporate entrepreneurship is the process whereby the firms engage in diversification through internal development. Such diversification requires new resource combinations to extend the firms activities in areas unrelated or marginally related to its current domain of competence and corresponding opportunity set. Moreover, (Covin & Slevin, 1991a) emphasized Corporate entrepreneurship involves extending the firm's domain of competence and corresponding opportunity set through internally generated new resource combination. (Burgelman, 1983) and (Jennings & Lumpkin, 1989) highlighted corporate entrepreneurship as the extent to which new products and or new markets are developed. An organization is entrepreneurial if it develops higher than average number of new products and or new markets.

However, as the field of strategic management furthered, the emphasis shifted to entrepreneurial processes, that is, the methods, practices, and decision-making styles managers use to act entrepreneurially within the firms to intensify the performance and spur the expansion of the business. This include such processes as experimenting with promising new technologies, being willing to seize new product-market opportunities, and having a predisposition to initiate risky ventures. The trend was to use concepts from the strategy-making process literature to model firm-level entrepreneurship (Covin & Slevin, 1989b), 1991), (Miller D. , 1983). Five dimensions-autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness- have been useful for characterizing and distinguishing key entrepreneurial processes, that is, a firm's entrepreneurial orientation (EO). Firstly, study addressed to discuss about the company and its operations followed by theoretical aspect of EO and its dimensions each by each with application at ABC Hotels chain, SBU, in ABC Holdings. Finally, study expects to provide implications for further research and practice and to provide a conclusion and recommendation to the study.

## **1.1.INTRODUCTION TO ABC HOLDINGS**

ABC Holdings plc (ABC) is one of the largest listed companies on the Colombo Stock Exchange, with business interests spanning primarily in Leisure, Transportation, Property, Consumer Foods & Retail, Financial Services and Information Technology. Established in the early 1870s as a produce and exchange broking business, the Group has been known to constantly re-align, re-position and re-invent itself in pursuing growth sectors. ABC was incorporated as a public limited liability company and got a listing on the Colombo Stock Exchange.

The Group's investment philosophy is based on a positive viewpoint, bold approach, integrity, ethical dealings, sustainable development and greater social responsibility in a multi-stakeholder context. The holding company of the Group, ABC Hotels Plc has business across Sri Lanka, India and the Maldives.

# ENTREPRENEURIAL ORIENTATION AT ABC HOTELS PLC

Anuranga, B. K. H. D.

*Department of Commerce and Financial Management, University of Kelaniya, Sri Lanka*

## **Abstract**

*This case study is about Entrepreneurial Orientation (EO) dimensions of autonomy, risk taking, innovativeness, proactiveness and competitive aggressiveness practiced at ABC Hotels plc, hypothetical name, as it is the benchmarking company for many practices in Sri Lanka. This is a qualitative study where the data for the research were gathered via interview and the annual reports of ABC Hotels plc. With regard to autonomy, middle and lower level managers had not been vested power to act as they wish. On the contrary, almost all the employees were vested with the power to bring forth anything to the ground as they wish provided they bring business turnarounds. Business risk taking is fairly high as it undertook loss incurring TA, and with a long term payback period of Obrim with huge investment. Proactiveness and competitive aggressiveness were seen in practice fairly. In conclusion it was observed that all the dimensions of EO except for autonomy were fairly practiced at ABC Hotels PLC.*

**Keywords:** Entrepreneurial Orientation (EO), Corporate Entrepreneurship, ABC Hotels PLC

## **1. INTRODUCTION**

For both successful start-up ventures and existing firms, entrepreneurship practiced in the pursuit of business opportunities leads business expansion, technological progress, and wealth creation. Entrepreneurial activity represents one of the major engines of economic growth and today accounts for significant amount of new business development and job creation in Sri Lanka (Central Bank of Sri Lanka, 2013) . As such, writers in scholarly literature (Covin & Slevin, 1991a) have argued that entrepreneurship is an essential feature of high-performing firms, followed by the overall economy in a country, rather the firms practicing entrepreneurial dimensions.

Before discussing about corporate entrepreneurship, it is noteworthy to mention what entrepreneurship is all about. Entrepreneurship has meant in different ways to different people (Gartner W. B., 1988); (Mcmullan & Long, 1990). The earliest definition to entrepreneurship is traced back to the definition by Richard Chantillan's seminal work. As for him entrepreneurship was self-employment with an uncertain return. To (Schumpeter, 1934a) an entrepreneur is "a person who carries out new combinations, which may take the form of new products, processes, markets, organizational forms, or sources of supply. Entrepreneurship is, then, the process of carrying out new combinations.

However, in the recent times the entrepreneurial abilities and capabilities of corporate organizations have become a major phenomenon of discussion among both practitioners and academicians. With this broadening of perspective, entrepreneurship has become more a hypothetical and abstract term attached (Sharma & Chrisman, 1999) to any individual or

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In additament, the results denote that there was a consequential treatment effect on test-takers' motivation after abstracting the testing effects. The computer-predicated testing mode incremented the participants' intrinsic motivation, self-efficacy, and solicitousness. It reflects the ability of the computer-predicated mode to stimulate the participants to answer the computer-predicated testing posttest with higher motivation than in the case of paper-predicated testing.

Since testing is an avail to learning, and it is a practice that is part and parcel of a good scholastic system, an advantage of utilizing computer-predicated testing, as shown in this study is that it increments test-takers' motivation, which in turn heightens their disposition to be tested and increases testing participation rate (Wenemark, 2011).

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## 6. DISCUSSION AND CONCLUSION

Results of the analyses betoken that there were paramount testing effects on the biology test scores for the paper-predicated and computer predicated testing modes. The testing effect for paper-predicated mode ( $d = .83$ ) was negative and additionally more astronomically immense than for the computer predicated mode ( $d = .57$ ). In other words, the paper-predicated mode is associated with more solemn testing effect quandaries than the computer- predicated mode. The results withal denote that by abstracting the testing effects, no treatment effect was found on test performance. This designates that the achievement test has consummated the requisites of the International Guidelines on Computer-Predicated Testing (International Test Commission, 2004), and the result is consistent with the True- Score Test Theory that requires parallel tests to show proximately equal mean scores (Allen & Yen, 1979). Concurrently, it suggests that it is the responsibility of instructional designers to craft and design high-quality computer-predicated tests that parallel the conventional paper-predicated test, and extensively pilot test them to ascertain parity afore implementing computer- predicated testing.

A critical issue of the study is about the test type and measures of testing scores in utilization. As acknowledged in the inhibitions of a recent study (Chua, 2012), psychological test is different from achievement test. Psychological test captures the innate personality issues which are more stable. Therefore, test scores across the computer-predicated and paper-predicated modes are expected to be commensurable. For examples, psychological test scores have been reported as equipollent across the two testing modes in tests of personality (Davis, 1999; Fox & Schwartz, 2002), progressive demeanor (Williams & McCord, 2006), sensitive comportment (BoothKewley, Larson, & Miyoshi, 2007), self-esteem (Vispoel, Boo, & Bleiler, 2001), morality (Cronk & West, 2002), mood (Fouladi, McCarthy, & Moller, 2002; Tseng, 1998) and despondence (Ogles, 1998).

On the other hand, achievement test may be influenced by context of test, for example, motivation and inclination of the participants to achieve higher scores in the tests. Nevertheless, the study has shown that the inclination of the participants to achieve higher scores did not engender different results between the two testing modes. Test-takers' motivation was not a consequential mediator for the effect of testing mode on test performance of the achievement test. The results of this study complement the finding of a recent study that no treatment effect was found between paper-predicated and computer-predicated testing modes on psychological test performance after abstracting testing effects (Chua, 2012), that testing mode has no paramount effect on either psychological test or achievement test scores.

The results of this study additionally provide an explication for why some antecedent studies have shown a paramount distinction between the two testing modes in test performance even though theoretically no difference should be observed. Testing effect did occur in this testing mode commensurability study albeit it was not identified and reported by most of the researchers of past studies; instead they found consequential treatment effects. However, the conclusion that computer-predicated testing has an effect on the experimental variables (test performance) might have been bamboozling and a case of misinterpretation because there is a possibility that the vicissitudes in the experiment variables are caused by testing effects, rather than the treatment effects.

**Table 2**  
Effect of computer-based testing on test performance and test-takers' motivation.

Subscale		Control		Treatment		Pillai's trace test	Treatment effect size (Cohen's <i>d</i> )
		Pre	Post	Pre	Post	Interaction effect (F-ratio value at <i>df</i> = 1, 66)	
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)		
With testing effect	Test Performance (Biology score)	69.97 (7.78)	63.44 (6.59)	68.59 (8.19)	73.06 (7.54)	20.35**	.57
	Overall motivation	96.09 (7.75)	91.06 (7.23)	96.44 (9.71)	112.09 (7.59)	102.87**	<b>1.79</b>
	Intrinsic	15.56 (2.52)	14.41 (2.97)	15.50 (3.01)	18.06 (5.42)	9.10**	<b>.58</b>
	Extrinsic	16.50 (3.68)	15.09 (3.44)	17.47 (4.00)	18.91 (3.52)	8.85**	<b>.50</b>
	Personal relevance	14.71 (2.45)	14.32 (4.21)	15.12 (3.27)	16.41 (2.36)	2.84	.45
	Self-determination	15.91 (4.50)	15.74 (4.53)	17.21 (3.78)	20.79 (2.52)	16.65**	<b>1.11</b>
	Self-efficacy	18.59 (4.52)	16.18 (3.63)	16.79 (4.31)	20.00 (2.87)	34.37**	<b>.87</b>
Testing effect removed	Anxiety	14.82 (2.36)	15.32 (2.17)	14.35 (2.53)	17.91 (2.88)	20.01**	<b>1.31</b>
	Test Performance (Biology score)	66.44 (9.01)	69.97 (7.78)	65.41 (10.21)	68.59 (8.19)	.19	.34
	Overall Motivation	99.76 (8.96)	96.09 (7.75)	91.82 (5.10)	96.44 (9.71)	9.90**	<b>.60</b>
	Intrinsic	16.85 (2.39)	15.56 (2.52)	13.67 (2.95)	15.50 (3.01)	11.84**	<b>.61</b>
	Extrinsic	14.74 (3.65)	16.50 (3.68)	16.29 (3.02)	17.47 (4.00)	.21	.23
	Personal relevance	15.47 (2.59)	14.71 (2.45)	15.38 (2.94)	15.12 (3.27)	.45	.08
	Self-determination	17.38 (4.27)	15.91 (4.50)	18.56 (3.91)	17.21 (3.78)	.03	.35
	Self-efficacy	20.12 (3.94)	18.59 (4.52)	14.91 (2.46)	16.79 (4.31)	12.84**	<b>.54</b>
	Anxiety	15.21 (2.08)	14.82 (2.36)	13.06 (2.04)	14.35 (2.53)	4.25*	<b>.56</b>

\*  $p < .05$ .

\*\*  $p < .01$ .

**Table 3**  
Impact of test-takers' motivation towards the effect of testing mode on test performance.

Dependent variable	Covariate (Control variable)	Source	Mean square	<i>F</i> (1, 66)	<i>p</i>
Test performance (Biology score)	Test takers' motivation	Testing mode	494.99	2.32	.13
	-	Testing mode	434.83	2.04	.15

## 5.2. The treatment effects of computer-predicated testing on test performance and test-takers' motivation

The results of the Split-Plot ANCOVA analysis (multivariate analysis of variance utilizing the Pillai's Trace test) afore and after eliminating the testing effects (as shown in Table 2) denote that with testing effect, there was a consequential treatment effect of computer-predicated testing on the biology test scores [ $F(1, 66) = 20.35, p < .05$ ]. However, by abstracting the testing effect, no consequential treatment effect of computer-predicated testing was found in the biology test scores [ $F(1, 66) = .19, p > .05$ ]. It signifies that there was no consequential treatment effect of computer-predicated testing on the biology test scores, and the effect of computer-predicated testing on the biology test scores was genuinely due to the testing effect.

In integration, the data in Table 2 betokens that paramount treatment effects occurred in total test-takers' motivation after abstracting testing effects [ $F(1, 66) = 9.90, p < .01; d = .60$ ] and their three motivation dimensions: intrinsic motivation n [ $F(1, 66) = 11.84, p < .01; d = .61$ ], self-efficacy motivation [ $F(1, 66) = 12.84, p < .01; d = .54$ ] and apprehensiveness [ $F(1, 66) = 4.25, p < .05; d = .56$ ] with medium effect sizes (Cohen's  $d$  values were between .54 and .61). The results betoken that the computer-predicated testing mode has significantly incremented the motivation level of the participants.

To further understand the sodalities among testing mode, test performance and test-takers' motivation, an Analysis of Covariance (optically discern Table 3) was performed to identify whether test-takers' motivation has an impact on the effect of testing mode on test performance. Results in Table 3 denote that there was no paramount treatment effect of testing mode on the biology test performance with [ $F(1, 66) = 2.04, p > .05$ ] or without [ $F(1, 66) p > .05$ ] test-takers' motivation. It signifies test-takers' motivation was not a consequential mediator for the effect of testing mode on test performance of the achievement test. In other words, with or without the effects of test-takers' motivation, no difference was found in the biology test scores according to whether the biology test was taken in paper-predicated and computer-predicated testing modes.

**Table 1**

Testing effects for paper-based testing and computer-based testing modes on test performance and test-takers' motivation.

Subscale	Testing effect for paper-based testing					Testing effect for computer-based testing				
	Control group 1	Control group 2	Mean difference	T test	Effect size (Cohen's <i>d</i> )	Treatment group 1	Treatment group 2	Mean difference	T test	Effect size (Cohen's <i>d</i> )
	Mean (SD)	Mean (SD)		t Value at df = 66		Mean (SD)	Mean (SD)		t Value at df = 66	
<i>Test performance</i>										
Biology score	69.97 (7.78)	63.44 (6.59)	-6.53	-3.73**	-.83	68.59 (8.19)	73.06 (7.54)	5.06	2.34*	.57
Overall	96.09 (7.75)	91.06 (7.23)	-5.03	-2.76**	-.68	96.44 (9.71)	112.09 (7.59)	15.65	7.39**	1.82
<i>Motivation</i>										
Intrinsic	15.56 (2.52)	14.41 (2.97)	-1.15	-1.71	-.42	15.50 (3.01)	18.06 (5.42)	2.56	2.40**	.59
Extrinsic	16.50 (3.68)	15.09 (3.44)	-1.41	-1.63	-.40	17.47 (2.00)	18.91 (3.52)	1.44	2.07*	.51
Personal relevance	14.71 (2.45)	14.32 (4.21)	-.38	-.45	-.11	15.12 (3.27)	16.41 (2.36)	1.29	1.86	.46
Self- determination	15.91 (4.50)	15.74 (4.53)	-.18	-.16	-.03	17.21 (3.78)	20.79 (2.52)	3.59	4.60**	1.13
Self-efficacy	18.59 (4.52)	16.18 (3.63)	-2.41	-2.42*	-.59	16.79 (4.31)	20.00 (2.87)	3.21	3.60**	.89
Anxiety	14.82 (2.36)	15.32 (2.17)	.50	.90	.22	14.35 (2.53)	17.91 (2.88)	3.56	5.40**	1.33

A significant t-test result indicates a testing effect for paper-based testing or computer-based testing on a subscale.

The values of Cohen's *d* effect size were calculated based on the mean and standard deviation scores. Cohen defined effect sizes as "small when  $d = .21-.49$ ," "medium when  $d = .50-.79$ ," and "large when  $d \geq .80$ " (Cohen, 1988).\*  $p < .05$ .\*\*  $p < .01$ .

the computer-predicated testing mode (posttests for test performance). Then the four groups answered the same BMQ to identify their motivation towards the two testing modes (posttests for test-takers' motivation). It must be pointed out that the BMQ was not quantifying the motivation level of the participants towards the biology test because the test is identical in the two testing modes. It was acclimated to quantify participants' motivation towards the two testing modes.

A key advantage of the control-treatment reiterated-measures experimental design utilized in this study is that individual distinctions between participants are abstracted as a potential confounding variable during the course of the experiment (Psycho Metrics., 2010). These individual differences include history and maturity effects. History effects refer to external events (e.g. reading books, visually examining TV programs or exposure to other sources) that can affect the replications of the research participants, while maturity effects refer to transmutations in a participant's development due to natural magnification or development during the course of the experiment (Chua, 2009; Dane, 1990).

## 5. RESULTS

### 5.1. The testing effects of paper- predicated testing and computer- predicated testing

The data in Table 1 betokens that there were consequential testing effects on the biology test scores for the paper-predicated testing mode [ $t(66) = 3.73, p = .00; d = .83$ ] and computer-predicated testing mode [ $t(66) = 2.34, p = .01; d = .57$ ]. In integration, for the paper-predicated testing mode, paramount testing effects were found in test-takers' overall motivation [ $t(66) = -2.76, p = .00; d = -.68$ ] and self-efficacy [ $t(66) = -2.42, p = .02; d = -.59$ ]. For computer-predicated testing mode, consequential testing effects were found in test-takers' overall motivation [ $t(66) = 7.39, p = .00; d = 1.82$ ], intrinsic [ $t(66) = 2.40, p = .01; d = .59$ ], extrinsic [ $t(66) = 2.07, p = .02; d = .51$ ], self-resoluteness [ $t(66) = 4.60, p = .00; d = 1.13$ ], self-efficacy [ $t(66) = 3.60, p = .00; d = .89$ ] and solicitousness [ $t(66) = 5.40, p = .00; d = 1.33$ ].

The results betoken that consequential testing effects occurred in the biology test performance and test-takers' motivation for both the paper-predicated and computer-predicated modes. For test performance, the former had a more immensely colossal testing effect ( $d = -.83$ ) with a negative test effect value while the latter had appositive test effect value ( $d = .57$ ). It signifies that taking the pretest had an effect on taking the posttest in that it reduced the posttest score in the paper- predicated testing mode while incrementing the posttest score of the computer-predicated testing mode. In general, the paper-predicated testing mode reduced the posttest motivation score with a medium and negative effect size ( $d = -.68$ ) while in contrast the computer- predicated testing mode incremented the posttest motivation score with a sizably voluminous effect size ( $d = 1.82$ ). Since testing effects occurred in both testing modes, to examine the treatment effects of computer-predicated testing on test performance and test-takers' motivation, the testing effects were eliminated in the analysis. To eliminate the testing effects in examining treatment effect of computer-predicated testing, M4 (paper-predicated testing posttest after exposed to pretest) was superseded with M3 (paper-predicated testing posttest without pretest). This is because the two paper-predicated testing posttest scores are identical if there is no testing effect in M4. The same applies to the computer-predicated testing posttest. M6 was superseded with M5 in the treatment effect analysis.



plasma membrane, (3) the chemical composition of the cell, (4) alimentation, (5) respiration, (6) dynamic ecosystem and (7) imperiled ecosystems. It accumulated data for the participants' test performance when they answered the biology test in paper-predicated and computer-predicated testing modes. The test– retest reliabilities (Pearson correlation coefficients) at a 2 months' interval for the biology test in paper-predicated and computer-predicated testing modes were .83 and .87.

### **4.3.2. Biology Motivation Questionnaire**

The Biology Motivation Questionnaire (BMQ) is a 30-item questionnaire developed by Glynn and Koballa (Glynn & Koballa, 2006), which was habituated to assess six components of students' motivation to learn biology in college or high school courses. The six components are intrinsic, extrinsic, personal pertinence, self-tenaciousness, self-efficacy, and apprehensiveness.

Bryan investigated the validity of the BMQ with college students. He reported that the BMQ had high internal consistency reliability (Cronbach's alpha ranged from .88 to .91) and criterion- cognate validity (Bryan, 2009). The researcher reported that the BMQ is a reliable, valid, and facilely administered instrument for studies of the motivation of college students to learn biology.

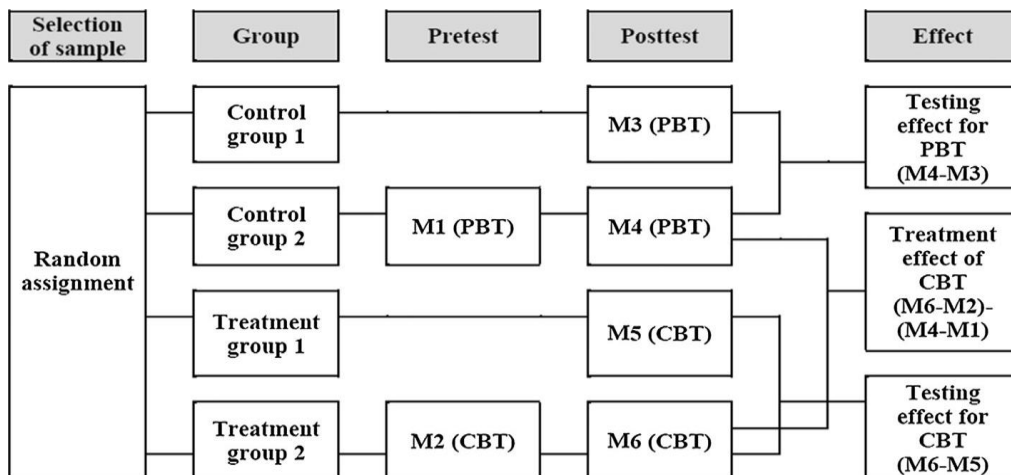
Bryan reported that the BMQ scales appeared to have substantial evidence for content validity as the items were developed and culled by experts. It withal has high criterion validity because the items tested are cognate to the students' achievement. More- over, each scale has face validity because deception is not utilized in the items and verbal expressions at the commencement of each questionnaire provide a contextually valid purport for the scale. Each scale has additionally been proved subsidiary in research. This questionnaire has been used to test a theoretical model of motivation with non-science majors enrolled in college science classes by Glynn, Taasoobshiraze, and Brickman (2007). The BMQ was developed predicated on a five-point Likert scale to assess participants' motivation towards the two testing modes. The motivation scales ranged from 1 (Never) to 5 (Always). Appendix A shows the BMQ items. In an earlier study of 30 student edifiers who answered the Biology Motivation Questionnaire, the interior uniformity reliabilities were at a copacetic level, ranging from .84 to .92 (Intrinsic = .89, extrinsic = .88, personal pertinence = .90, self-tenaciousness = .84, self-efficacy = .92, and solicitousness = .87).

For the computer-predicated testing mode, the test was developed d in a computer-predicated system by utilizing a C# program. When participants respond to the test items, their test scores are presented instantly by the computer program. As for the paper-predicated mode, the test for each participant was marked manually by the researchers.

## **4.4. Procedures**

In the first phase, control group 2 took the biology test in paper- based mode, while treatment group 2 took pretests for biology test performance in computer based mode. Then the two groups replied the Biology Motivation Questionnaire to identify their motivation towards the two testing styles (pretests for test-takers' motivation) (see Fig. 1).

Two weeks later, in the second phase, all four groups took the biology test. The two control groups answered the paper-predicated testing mode and the two treatment groups answered



Note: M = Measurement; PBT = Paper-based testing; CBT = Computer-based testing

**Figure 01: Design of the study**

To eliminate the testing effects in examining the treatment effect of computer- predicated testing, if there is a testing effect in M4 (paper-predicated testing posttest), then it will be superseded with M3. This is because the two paper-predicated testing posttest scores are identical if there is no testing effect in M4. The same applies to the computer- predicated testing posttest. If testing effect transpires in M6, then it will be superseded with M5 in the treatment effect analysis.

To analyze the data for the design, two steps are needed: (1) A two independent samples t-test is performed to identify the testing effects (M4–M3) or (M6–M5) and (2) A Split-Plot Analysis of Variance test is carried out to identify the treatment effects. A computer-predicated testing treatment effect is detected if a paramount interaction effect occurs. The participants in this study comprised of both genders, and precedent studies designated that gender was a consequential covariate for the sodalities between testing modes with biology test performance (Yong, 2009) (Ozkan, 2003) and motivation (Adsul & Kamble, 2008) (Adedeji, 2007), therefore a Split-Plot Analysis of Covariance test was employed to abstract the effect of gender as a potential covariate in determining the sodalities between testing modes with test performance and motivation.

### 4.3. Instruments of the study

Two instruments were habituated to amass data. The biology test was habituated to amass data for participants’ test performance. The Biology Motivation Questionnaire was habituated to accumulate data for participants’ motivation towards the same biology test in paper-predicated and computer-predicated testing modes for comparison.

#### 4.3.1. The biology test

The biology test is an edifying achievement test consisting of 40 multiple-cull items, with a score of 2.5 for each item, and a total test score of 100. The items were developed from seven topics: (1) cell structure and cell organization n, (2) the kineticism of substances across the

desultorily from a student teacher population ( $N = 209$ ) utilizing the Sample Size Resoluteness Table of Krejcie and Morgan at a 95% ( $p < .05$ ) confidence level (Chua, 2011). The participants were enrolled in an edifier inculcation programme at the Mathematics and Science Department. They have the same inculcative history and background. They possess the same level of computer skills (rudimental computer, word processing and internet skills) and received formal computer injunctive authorization in their academic curriculum. Their performance scores on a five point Likert scale that consisted of 18 computer adeptness items (total score = 90) were in the range of 66–80, with an average mean score of 74.59 ( $SD = 3.88$ ).

Predicated on their performance in a biology monthly test and the recommendations of their lecturers, the student edifiers with kindred abilities were divided into 34 equipollent groups (each with four equipollent participants). The four participants in each group were then assigned to four groups through a simple arbitrary sampling procedure, each with a sample size of 34. The mean scores for the four groups were proximately identical with regard to computer skills and no differences among the four groups were observed [mean scores ranged from 74.21 to 74.67,  $F(3, 132) = .94, p > .05$ ]. The four groups were then arbitrarily assigned to two control and two treatment groups for the experimental study.

## 4.2. Research Design

The Solomon four-group experimental design is one of the best methods to identify testing effects in experimental designs (Yu & Ohlund, 2010). It consists of two fundamental categories of research design: (1) two groups of participants who are given treatment and two groups of participants who are not given treatment and (2) two groups of participants who are given the pretest and two groups of participants who are not given the pretest. The advantage of this design compared to the fundamental two-group pretest and posttest design is that it is capable of identifying the occurrence of testing effects in integration to the treatment effects on experimental variables.

The values of  $M_4 - M_3$  and  $M_6 - M_5$  (See Fig. 1) are the testing effects for the control and treatment groups. If there are no difference s between the values of  $M_4$  and  $M_3$  as well as  $M_6$  and  $M_5$ , formerly at hand are not any testing effects. Therefore, the  $(M_6 - M_2) - (M_4 - M_1)$  value will give an estimate of the treatment effect of computer- predicated testing. However, any distinction between  $M_4$  and  $M_3$  or  $M_6$  and  $M_5$  is caused by the pretest effect in  $M_1$  and  $M_2$ . In these cases, the researcher cannot simply conclude that the treatment computer-predicated testing has an effect on the experimental variables (test performance and test-takers' motivation) if there is a paramount treatment effect (testing mode) because there is a possibility that the vicissitudes in the experiment variables are caused by testing effects, besides not by the handling effects.

effects than achievement adeptness (Chua, 2012). However, the claim needs further research afore any firm conclusion can be reached.

### **3. THE EFFECTS OF MOTIVATIONAL FACTORS ON THE RELATIONSHIP BETWEEN TESTING MODES AND TEST PERFORMANCE**

Apart from testing effect, an issue raised by some researchers which needs to be demystified if paper-predicated tests are to be superseded with computer- predicated tests is that motivational factors might additionally have an impact on the effect of computer-predicated testing on test performance (Sapient & DeMars, 2003). Sapient and DeMars pointed out that regardless of how much psychometric care is applied in the development of the test, or of how equal the testing modes are, the validity of the test scores will be compromised to the extent that the test-takers are not motivated to respond to the test (e.g. due to low efficacy or jejunity). The Test-taker Motivation Model (Pintrich, 1989) designates that the effort a test-taker directs towards a test is a function of how well he feels he is going to do on the test, how he perceives the test, and his affective reactions regarding the test. This is the theoretical model that underlies the relationship among motivation, testing mode and test performance. In integration, the Self-resoluteness Theory (Wenemark, Persson, Brage, Svensson, & Kristenson, 2011) states that incremented motivation on the component of test-taker s will increment their replication rates or their inclination to take the test, and so enhance learning. The motivation of test-takers is therefore an aspect worth investigating in testing mode commensurability studies, because it can pose a threat to the validity of inferences made regarding assessment test results (Shuttleworth, 2009). However, one of the barriers to the implementation of computer-predicated testing in edifying assessment is that insufficient study has been composed of the equipollence of computer-predicated testing and paper-predicated testing (Bugbee, 1996).

Taking into consideration all of the issues discussed above, this study utilizes an inculcative achievement test, and a Solomon four- group experimental design to investigate the validity and efficacy of computer-predicated testing by comparing it with the paper-predicated testing. Concretely, it seeks to (1) ascertain whether testing effects occur in computer-predicated testing and paper-predicated testing, and (2) trace the impact of test-takers' motivation on the effects of testing mode on inculcative achievement test performance. Predicated on the observation and claims of some researchers (Chua, 2012; Shuttleworth, 2009; Yu & Ohlund, 2010), this study hypothesizes that testing effects may occur in computer-predicated and paper- predicated testing. In integration, predicated on Self-resoluteness Theory (Wenemark, 2011), it is hypothesized that the effects of testing mode on test performance are mediated by testing motivation.

## **4. METHODS**

### **4.1. Participants**

The participants in this study were 136 Sri Lankan undergraduate student edifiers from a teacher training institute located in Gampaha District of Sri Lanka. The participants consisted of 60 males (44.12%) and 76 females (55.88%) with an average age of 21. They were culled

to obtain proximately identical test scores. The standards are additionally fortified by empirical studies (Mason, Patry, & Berstein, 2001; OECD, 2010; Schaeffer, Reese, Steffen, McKinley, & Mills, 1993; Wilson, Genco, & Yager, 1985). For example, OECD reported that there were no differences in test performance between the two testing modes among student participants (n = 5,878) from Denmark, Iceland and Korea (OECD, 2010).

Interestingly, however, in a review of educational measurement approaches, Bunderson, Inouye, and Olsen reported that 52% of previous studies showed differences between the two testing modes, 13% obtaining higher marks for computer- based testing and the remaining 39% obtaining higher marks for paper-based testing (Bunderson, Inouye, & Olsen, 1989). The possibility that they were equivalent was supported by less than half of the studies, and the differences were found in achievement tests such as in science, languages and mathematics (see e.g. Choi, Kim, & Boo, 2003; Federico, 1989, Friedrich & Bjornsson, 2008; DeAngelis, 2000; Mazzeo, Druesne, Raffeld, Checketts, & Muhlstein, 1991).

One possible explication is that computer-predicated testing is by nature of low validity as an assessment implement for scholastic and psychological quantifications in higher edification. Another possibility is that some other factors have distorted the effects of testing mode on test performance in these reiterated-measure s studies. As observed by Yu and Ohlund, a possible confounding variable is testing effect, which is the consequence of taking a pretest on the performance in a posttest. It could be that this systematically distorts the treatment effect of computer-predicated testing on test performance (Yu & Ohlund, 2010).

## **2. ISSUES OF VALIDITY OF COMPUTER-PREDICATED TESTING IN EDUCATIONAL ASSESSMENT: TESTING EFFECT IN REPEATED MEASURES**

A meticulous analysis of research reported in the literature reveals that most commensurability y studies of computer-predicated testing and paper-predicated testing have been carried out utilizing pretest–posttest experimental designs (or reiterated-measure s designs), but that this has been done without quantifying testing effects on test-takers. For this reason, it is quite possible for the findings to be misinterpreted. The inhibition of this design is that there might be a testing effect when a participant is tested at least twice on the same test, and the taking of a pretest could influence the outcome of a post- test (Chua, 2012; Shuttleworth, 2009; Yu & Ohlund, 2010). This issue needs further research because the Standards for Edifying and Psychological Testing guidelines (American Psychological Sodality, 1986) require that any effects due to computer administration be either eliminated or accounted for in the interpretation of test scores in any testing mode commensurability study.

A recent study has reported that the computer- predicated testing mode was more reliable in terms of internal and external validity, and no testing effect on test performance score was found in the computer-predicated testing mode. In integration, the testing mode reduced testing time and incremented the motivation of the participants (Chua, 2012). However, the study has suggested that the extent to which the findings can be generalize d was inhibited by the psycho- logical test (the Creative–Critical Styles Test) utilized in the study. It was additionally suggested the study would probably yield different results if the psychological test were superseded with an achievement test. The reasons for this is that psychological traits such as cerebrating style are more consistent over time and have less historical and maturity

# IMPACT OF COMPUTER-PREDICATED EDUCATIONAL ACHIEVEMENT TEST ON TEST PERFORMANCE AND TEST TAKERS' MOTIVATION

Amarathunga, P. A. B. H.<sup>1</sup> and Pathiratne, S<sup>2</sup>

<sup>1</sup>Faculty of Business Studies and Finance, Wayamba University of Sri Lanka  
buddhini@wyb.ac.lk

<sup>2</sup>Faculty of Computing, ESOF Metro Campus, Sri Lanka

## Abstract

*There has been an incrementing interest in recent years in developing and utilizing computer-predicated tests in edifying assessment. To supersede paper-predicated tests with computer-predicated ones, the standards for developing computerized-assessment (International Test Commission., 2004) requires equipollent test scores to be established for the incipient computer-predicated test and the conventional paper-predicated test. However, in most test mode commensurability studies, the genuine test items used have been identical, and yet consequential differences have been found in test scores in paper-predicated and computer-predicated modes. This has been reported for more than a few subjects, containing languages, science and mathematics. The validity of utilizing computer-predicated tests in edifying assessment must therefore be queried. This study involves a biology test and a biology motivation questionnaire utilizing a Solomon four-group experimental design to examine the validity of the computer-predicated test and its effects on test performance and the motivation of test-takers. The findings provide auxiliary evidence for the validity of computer-predicated test in scholastic assessment.*

**Keywords:** Computer-based testing, Biology, Testing, Effect Performance, Test-takers' motivation

## 1. INTRODUCTION

There has been a growing interest in recent years in developing and utilizing computer predicated tests in edifying assessment. Distributing assessment by computer is becoming increasingly prevalent in the domain of inculcative assessment as changes are made in assessment methodologies that reflect practical vicissitudes in pedagogical methods (OECD, 2010). Computer-predicated testing or computer-predicated assessment is optically discerned as a catalyst for change, establishing a transformation in learning, pedagogy and curricula in scholastic institutions (Scheuermann & Pereira, 2008).

In order to establish valid computer- predicated testing, the International Guidelines on Computer-Predicated and Internet-Distributed Testing (International Test Commission, 2004) state that equipollent test scores should be established for tests utilizing the conventional paper-predicated mode and the incipient computer-predicated mode. This set of testing standards is fortified by the classical True-Score Test Theory (Allen & Yen, 1979), which is the substructure of both computer- predicated and paper-predicated d testing. According to this theory, someone who takes the same test in the two modes can be expected

## **4. CONCLUSION**

Core banking systems are very much essential as well as very much significant to the overall success of the banking business in the contemporary environment. In order to achieving sustainable business results the individual banks has to pay much more attention to its existing core banking system and need to develop it according to the competitive requirement. Since core banking systems can be consider as a competitive advantage to the banking firm. When focus to getting competitive advantages, according to the theoretical explanation in the monopolistic competitive market the firm has to consider non price competitive strategies. Therefore the information system development can be considered as a sharpening powerful tool towards reach business vision. Considering about the nature of the core banking system is it designs to perform day-to-day business transaction in an effective way. But those transaction based information systems are not sufficient to make more rational strategic decision in order to winning the competitive as well as ever changing external environment. Therefore it is contemporary requirement to linking the core banking system with business intelligence system or developing business intelligence system component within the core banking system in order to generate more accurate, rational and timely information to make effective strategic business decision. This concept would be complex due to the available technologies and other limited resources including the top management awareness regarding this matter. But anyhow this concept can be transforming to the practical scenario and also can be expect to get more and more competitive advantages to the banking firm in the long run.

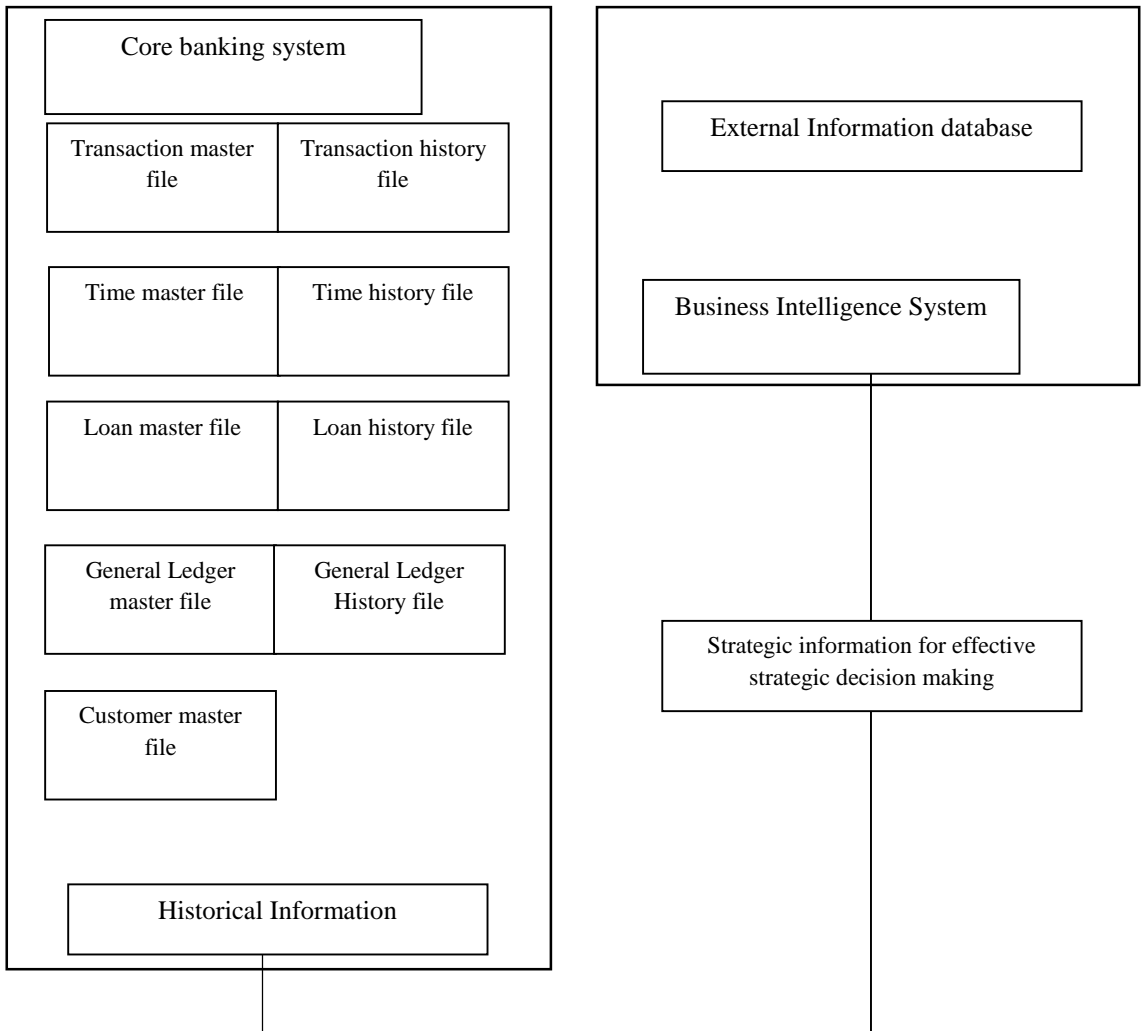
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**Figure 02: Relationship and output between core banking historical information and business intelligence**



the front end application and the core banking master database. This would create difficulties to reconciling general ledger accounts and also users need to putting extra effort to doing day-to-day accounts balancing and reconciliation. At the same time this practices not supporting to perform real time data processing. For an example if the bank's card management system is differ to the core banking system the automated teller machine transactions and card payment transactions are not updating real time basis. Moreover the same scenario is applicable to the internet banking transactions as well. Therefore as an alternative banks are using batch processing method to above type of combined transactions. When focus to the core banking system master files the system maintain separate master files and transaction history files for different type of transactions. In order to analyzing some information to take decisions most of the times they need to run a quarry. But there are many practical limitations participating to run a most appropriate quarry. Those limitations can be list down as data unavailability, complexity of making file to file relationship due to many primary keys and data format mismatch and system assess limitation due to the level of authority. Then the outcome of those mentioned limitations could be the management of the banking firm is fails to take right decision at the right time.

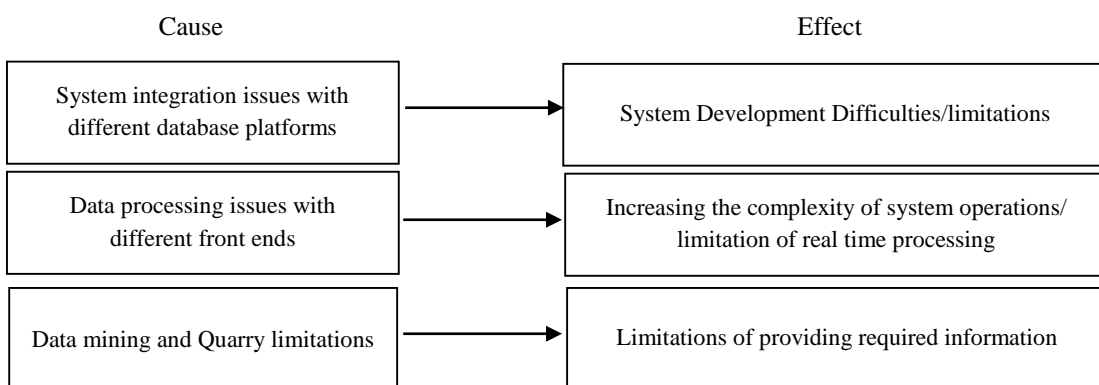
### **3. THE ILLUSTRATION OF CORE BANKING SYSTEMS RELATED STRATEGIC DECISION MAKING ISSUES**

Considering about the rational decision making process the fundamental requirement should be the most appropriated information. Simply that the quality of information is the foundation for quality decision. Focusing to the core banking system it's consist plenty of transaction based historical information but the question would be weather the set of available core banking information are very much significant to the strategic decision making parties of the banking firm. This may be doubt full since the argument would be, can only the internal information providing the bigger picture to make effective strategic business decision? According to the available literature and the generally accepted management practices the answer also should be absolutely no. The strategic decision maker needs more external information and the decision maker should be able to matching that external information with internal information considering the similar dimensions. For an example when plotting the strategic position of bank market share in terms of current and savings accounts, the decision maker need internal information as well as external information. In this case the internal information can be directly extract from the core banking system but the question is how and from what source the bank extract external information related to that strategic positioning task. To overcome this complex business scenario the bank has to create, record, maintain and continuously update another database for external information apart from the core banking information. This is the point when the concept of business intelligence coming to the action. Moreover core banking systems are not providing forecasted information's, business trends and also its not automatically generating consumer behavior tracking information for an example expenditure patterns of particular customer segment, customer need identification and many more. The figure 1 illustrates the big picture of core banking information, business intelligence information and the strategic information.

front end applications according to the bank’s business requirement for an example bank’s treasury department, card center, internet banking division may use different specialized information systems. In such a scenario the system integration is taking place. This could be more challengeable because the developers need to extract, transformed and loading data in between two different systems. Other thing is core banking systems are only providing historical as well as internal information to the management. It means that the core banking systems are not capable enough to provide relevant information to make strategic decisions comparing with ever-changing external environment. This is the point when business intelligent is taken place. In the next chapters of this paper will discuss those matters in briefly under the two identified topics including core banking systems operational issues and core banking systems related strategic decision making issues.

## 2. THE ILLUSTRATION OF CORE BANKING SYSTEMS RELATED OPERATIONAL ISSUES

The above topic can be discus under three main identified core banking system operational issues and the following diagram will support to understand those different scenarios and its impact.



**Figure 01: Cause and effect relationship of core banking system operations**

According to the figure 2.1 when the bank needs to develop its information systems connecting with core banking systems the first occurring issue shall be mapping relationship in between the different database formats. For an example if the bank has AS 400 core banking system with DB2 database and need to be link with newly developed Oracle based credit management system or financial accounts reporting system then the major task is mapping data in a hundred present correct way. This could be more challengeable to the system developers and also it’s not creating smooth and easy future system operations because this will lead to create more running bugs as well as high development and system maintains cost. Consider about the banking operations as a whole front line applications are playing vital role to provide effective customer services. For an example automated teller machines, internet banking applications, mobile banking applications, card management applications, treasury applications and front line teller applications. Whatever the front end application all must properly connected with the core banking system to smooth functioning. In this case most common issue can be identifying as a data communication failure in between

# CORE BANKING SYSTEMS AND BUSINESS INTELLIGENCE FOR EFFECTIVE STRATEGIC DECISION MAKING

Fernando, S. D.

*Institute of Human Resource Advancement, University of Colombo, Sri Lanka*

## **Abstract**

*Considering about the nature of existing core banking systems the fundamental attribute is it can be identify as a transaction processing system. It means that the system is processing day-to-day banking business transactions and stored historical information. Core banking systems are playing vital role in any fully automated bank as an information system hub. But the basic question is raised when focus to the information requirement for strategic decision making process. Are core banking systems providing required information to make effective strategic decisions? Can core banking systems fulfilling the task as an alternative for the business intelligence system? When focus to the identified problems with core banking systems it can be separated in to two categories such as system operational issues and strategic decision making difficulties due to using core banking historical system information. System integration issues due to different database platforms, data processing issues due to using different front end applications, data mining and quarry limitation can be identified as System Operational Issues and above two questions can be review under the strategy issue. Review of literature and case study approach has been applied as a methodology with qualitative analysis. Conclusions and recommendations are based on the analysis.*

**Keywords:** Core banking systems, Transaction processing system, Business intelligences, System operations, Strategic decision making

## **1. INTRODUCTION**

Considering about the financial sector in Sri Lanka the banking industry is giving significant contribution to the country's gross domestic product. According to the central bank annual report 2014 banking industry which comprised 33 licensed banks that is 21 domestic banks which include 9 licensed specialized banks in addition to 12 commercial banks, and 12 branches of foreign banks. This paper is basically focus to the licensed commercial banks segment only and the scope of the study can be identify as core banking systems which are using in licensed commercial banks as their main information system. When focusing to the core banking system it's supporting to performing day-to-day banking transactions including all banking business activities such as savings and current accounts operations, time accounts, loan products and general ledger accounts. The nature and the behavior of core banking system can be identifying as a transaction processing system. It means that core banking systems are specially designing to creating, maintaining and recording all business transactions in the relevant databases. Considering about the basic database structure of core banking system it's maintaining separate master files to each and every banking business transaction category with transaction history files and also all files are connected with primary key under the predefine database library. Core banking systems are integrated with many

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future researchers can also consider different constructs to adopt green supply chain practices and see the effect of firm size on that relationship.

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variable in many studies in the field of green supply chain management. Vanpoucke, (2014) used firm size as a profiling variable in his study expecting that firm size may influence the implementation of environmental practices as larger firms have more resources available to devote to environmental initiative and receive greater pressure from stakeholders than smaller firms. Therefore researcher's prime objective is to propose a model to find the moderating effect of firm size on institutional pressures and green supply chain practices adoption in order to fill the knowledge gap of the existing literature.

### 3. CONCEPTUAL MODEL

Based on the above theoretical background the researcher build following conceptual model to measure the moderating effect of firm size on institutional pressures and green supply chain practices. Institutional pressures are broadly categorized based on institutional theory as normative, coercive, and mimetic pressures and the model shows how firm size moderate the effect of institutional pressures to adopt green supply chain practices.

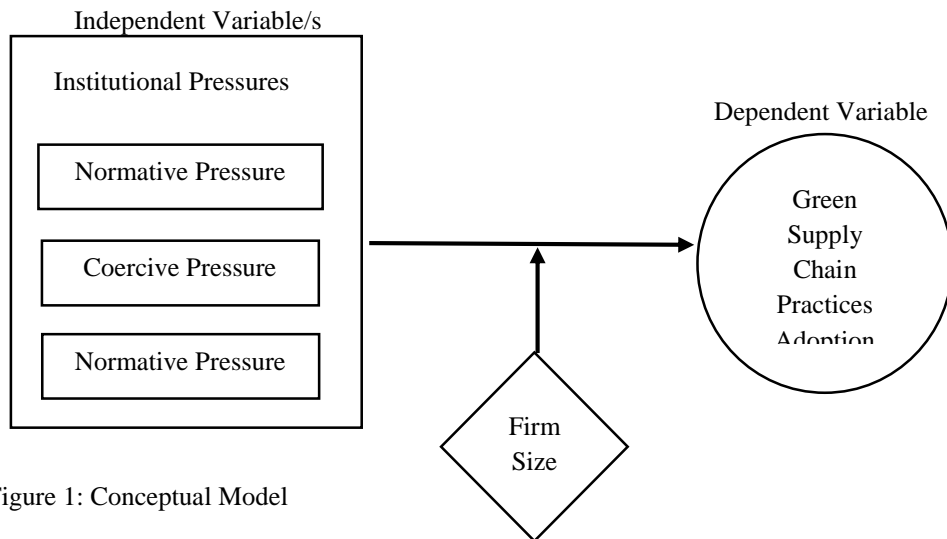


Figure 1: Conceptual Model

### 4. CONCLUSION

With the global trend of greening, researcher assumes that all the manufacturing companies have to adopt green supply chain practices in the future. Therefore identifying the key pressures for adoption of green supply chain practices and the effect of firm size on that relationship, is important to study to strengthen this area further. Since there is still no study testing moderating effect of firm size on supply chain discipline, this study will be filled the literature gap and contributed more to the existing knowledge. The researcher further anticipates that proposed model will be more contributed to enhance the adoption of green supply chain practices by potential manufacturing companies.

### 5. FUTURE RESEARCH DIRECTION

Since this is a conceptual paper, further researches can be done using the proposed model. Future researchers in the field of supply chain management will be encouraged to test this model using primary data collected from the manufacturing firms in any context. Besides

organizational legitimacy as a by-product of an organization adopting particular structures, beliefs, and behaviors due to cultural and social pressures enacted from their external environment (Barley & Tolbert, 1997). External environment is not exclusively impacted by institutions but institutional theory incorporates institutions as ideas, practices and process and the actions and behaviors are significantly influenced by institutions which they are located. Institutional theory is based on the notion that organizations located within the same environment are susceptible to adopting similar structures, behaviors and activities (Shonk & Bravo, 2010). And also institutional theory asserts that firms adopt initiatives in order to gain legitimacy or social acceptance. Institutional theory can be used to study how a company addresses green issues due to external pressures (Jennings & Zandbergen, 1995). In Institutional theory, three forms of pressures are identified as normative, coercive, and mimetic pressures (DiMaggio & Powell, 1983).

### ***2.2.1 Normative Pressure***

Normative pressures are exerted by firms in the similar industry or people in the similar groups. For the green supply chain practices adoption, the information on costs and benefits of adopting green practices are likely to be shared within the same industry. Furthermore sharing these norms among members of similar network facilitates potential influence on adopting green supply chain practices (Cai S. , Souza, Goh, Li, & Lu, 2008).

### ***2.2.2 Coercive Pressure***

Coercive pressures are exerted by external bodies through formal or informal power. Government agencies or rules and regulations are example for normative pressures that influence to organizational behavior. Most of the literature support the regulatory forces as coercive pressure (DiMaggio & Powell, 1983), (Cai S. , Souza, Goh, Li, & Lu, 2008).

### ***2.2.3 Mimetic Pressure***

Mimetic pressures occur when an organization follow successful competitors in the industry. Firms may imitate successful competitors through benchmarking in order to reduce the risk of adopting green supply chain practices or gain second mover advantages (Cai S. , et al., 2008).

## **2.3. Firm Size**

Size of a firm is an important element influencing various factors of a firm (Zawawi, Wahab, & Al-Mamun, 2014). According to Abiodun, (2013) firm size plays an important role in determining the kind of relationship the firm enjoys within and outside of its operating environment. Size of a firm is determined by two ways as annual turnover and number of full time employees. Effect of firm size has been much queried in the field of corporate finance. Previous studies showed that firm size is an important determinant of profitability (Abiodun, 2013). Since firm size is important element it is been used to test the moderating effect in many fields. Jayaram, Ahire, & Dreyfus, (2009) studied the moderating effect of firm size on total quality management and effectiveness of a firm while Wahab, Abdullah, Uli, & Rose, (2009) used the size as a moderator in their study of knowledge transfer. However the researcher could not find any literature regarding firm size effect on adopting green supply chain practices. But researcher found that number of researchers used firm size as a profiling

and practiced by forward thinking organizations as an emergent environmental approach in supply chain management.

As an emerging research area, early literature focuses on the necessity of the green supply chain management. It is not merely about reducing the environmental impact, it is further about good business practices and higher profits. In fact, as cited in Srivastava, 2007 it is a driver for creating value not a cost center. As mentioned by Porter & van der Linde, 1995 the reasons for investing on greening is achieving competitive advantages through resource saving, waste eliminating and productivity improvement. Thus the present organizations have set up the wide networks of the suppliers to take advantages of their characteristics to gain the competitive advantage (Lakshmeera & Palanisamy, 2013).

However despite the importance of green supply chain management, it is complex to adopt green supply chain practices due to inter organizational nature (Lakshmeera & Palanisamy, 2013). Many of scholars reveal that reason to complicate of adopting green supply chain practices is because of diversity of inter organizational systems including different stakeholders with conflicting interests. (Jonathan , Klassen, & Jayaraman, 2007). Moving to the empirical studies on key factors or drivers that influence for adopting of green supply chain initiatives, the researcher identifies the different results for the same drivers (Khidir & Zailani, 2011).

Given that, even though the large no of studies have been conducted on the area of adoption of green supply chain practices still it is in the researchable due to contradictory findings ( Bowen, Cousins, Lamming, & Farukt, 2001) (Khidir & Zailani, 2011). Similarly the researcher realizes that there is lack in extant body of knowledge for moderating effect of firm size in relationship of institutional pressures and green supply chain practices adoption.

## **2. THEORETICAL BACKGROUND**

### **2.1 Green Supply Chain Practices**

There is a multidimensional expansion of the literature on the area of Green supply chain practices. Green supply chain management involves environmental thinking into supply chain practices. This gave a birth to the concept of “green supply chain practices”. So green supply chain practices implemented the practices of green design, green purchasing, green logistics, green packaging etc. ( Chang, et al., 2013). Al-Aomar & Weriakat (2012) pointed out all the steps and elements of the supply chain must be analyzed for its environmental impact in order to adopt green practices. The key practices mentioned in previous studies include green design, green operations, reverse logistics, waste management and green manufacturing (Srivastava, 2007). However a framework proposed by Lakshmeera & Palanisamy, (2013) categorized green supply chain practices in to inbound practices, operations practices, outbound practices, reverse logistics, management support, and customer support. Zhu & Sarkis, (2004) has identified four green supply chain practices as internal environmental management, external GSCM including green purchasing and cooperation with customers including environmental requirements, investment recovery, and eco-design practices.

### **2.2 Institutional Pressures**

Institutional theory ( DiMaggio & Powell, 1983) is used to explain the key institutional pressures for adopting green supply chain practices. Institutional theory depicts



# CONCEPTUAL MODEL FOR MODERATING EFFECT OF FIRM SIZE ON INSTITUTIONAL PRESSURES AND GREEN SUPPLY CHAIN PRACTICES ADOPTION

Jayarathna, B. C. P.

*Department of Commerce and Financial Management, Faculty of Commerce and Management Studies, University of Kelaniya, Sri Lanka  
Email: chamari.jay@gmail.com*

## **Abstract**

*The concept of Green Supply Chain Management is highly discussed and drawn more attention in contemporary world today. The need of sustainable environment and sustainable organization motivates to draw more attention on Green Supply Chain Practices. Realizing this phenomenon number of researchers developed models to measure the effect of pressures on green supply chain practices adoption. In this study pressures on green supply chain practices are identified as normative pressures, coercive pressures, and mimetic pressures based on institutional theory. Previous studies showed that institutional pressures have significant effect on adopting green supply chain practices. But no single research in supply chain management field to study moderating effect of firm size on pressures and practices of green supply chain management. Therefore this study aims to provide conceptual model to test the moderating effect of firm size in the relationship of institutional pressures and green supply chain practices adoption by filling the identified gap. It is expected that proposed model will be more contributed to enhance the adoption of green supply chain practices by different size of manufacturing companies.*

**Keywords:** Green Supply Chain Management, Institutional Pressures, Firm Size, Green Supply Chain Practices Adoption

## **1. INTRODUCTION**

The mounting prominence of the concept of Green Supply Chain Management is being discussing by the researchers today more than ever before. It is because of environmental issues raised through the process of delivering the products to end user. This process involves extraction and exploitation of natural resources (Srivastava, 2007). It becomes one of the main sources of serious environmental problems including global warming and acid rains (Kumar & Chandrakar, 2012). At present much of emphasis has been placed to mitigate global warming by reducing emissions from harmful greenhouse gases (Adopting for Green Economy: Companies, Communities and Climate Change, 2011). The same report further indicates that the leading companies, large and small are paying greater attention to the repercussions of climate change on their business as identified as risk of rising raw material or inputs prices, disruptions of their supply chain, threat to their labor force and changing their customer demand. Therefore most of the organizations tend to accept the green practices as a concern to environmental sustainability. The benefit of adopting green technology for business operations are not limited for the individuals who owns or operates the business but for the other stakeholders as suppliers, customers, and the society. Hence as cited in Abu Seman & Aslinda, 2012 Green supply Chain Management has been progressively accepted

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## 5. CONCLUSION

Healthcare staffs are change agents in healthcare sector. They are key drivers who play crucial role in ICT integration in healthcare. It is important for them to possess positive computer attitudes since attitudes has been found to be linked to usage and intention to use, variables that determine successful technology integration (Teo, 2008).

There were 64 females (64%) participants and 36 were male (36%). The average number of years of computer use was 8.46 years (SD=5.281). There were 84% participants strongly agree and 16% participant were agree for use ICT regularly for their official work in healthcare. In detail there were 78% male participant and 88% female participant strongly agree for use ICT regularly for their official work in healthcare. Behavioral intentions of healthcare staff with respect to ICT have positive responses in western region of Sri Lanka. They are willing to accept integration of ICT to the process of healthcare systems. This study depict that behavioral intention of healthcare staff with respect to ICT are not the bottleneck for integration of ICT to the State hospitals in western in Sri Lanka.

There are several limitations in this study. Firstly, the data collected was through interviewing healthcare staff with structured questionnaire during their working time. Staff responses may be sidelly variance when considered that they response in free time after the work. Secondly, the sample size in this study is relatively small, thus limiting the extent to which the findings of this study may be generalized. Finally, the variables chosen in this study were determined by the selection of the CAS for data collection. As a result, other significant variables that influence behavioral intention with respect to the ICT are excluded, leading to a limited understanding of behavioral intention with respect to ICT.

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disagree for this item (Table 3). This question was reverse scoring item. Therefore participant had negative response for this item. Healthcare staff willing to adapt ICT for their day to day work. It also depict that most of healthcare staff having positive thinking for works that related to the ICT.

**B3: I only use computers at hospital when I am told to**

There were 91% participants strongly disagree and 9% participant were disagree for this item (Table 2). In detail there were 89% male participant and 92% female participant strongly disagree for this item (Table 3). This question was reverse scoring item. Therefore participant had negative response for this item. Healthcare staff agreeable for doing their job in an efficient and effective way with the help of ICT. They do not wait until advice suppria to work with ICT. It also depict that most of healthcare staff having positive thinking for working with ICT.

**B4: I will use computers regularly for my official work in the hospital.**

There were 84% participants strongly agree and 16% participant were agree for this item (Table 2). In detail there were 78% male participant and 88% female participant strongly agree for this item (Table 3). This question wasn't reverse scoring item. Therefore participant had positive response for this item. Healthcare staff willing to adapt ICT for their day to day work. It also depict that most of healthcare staff having positive thinking for works that related to the ICT.

Table 3: Behavioral intention component items – Participant responses

	Strongly Disagree (SD)	Disagree (D)	Neutral (N)	Agree (A)	Strongly Agree (SA)
B1	94%	6%			
B2	99%	1%			
B3	91%	9%			
B4				16%	84%

Table 4: Behavioral intention component items – Participant responses according to gender.

	Gender	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
B1	M	89%	11%			
	F	97%	3%			
B2	M	97%	3%			
	F	100%				
B3	M	89%	11%			
	F	92%	8%			
B4	M				22%	78%
	F				13%	88%

Table 1: Behavioral intention component items in the *Computer Attitude Scale*

Behavioral intention component (four items)	B1	I would avoid taking a job if I knew it involved working with computers*
	B2	I avoid coming into contact with computers in hospital*
	B3	I only use computers at hospital when I am told to*
	B4	I will use computers regularly for my official work in the hospital.

## 4. RESULTS AND DISCUSSION

### 4.1 OVERALL PROFILE OF BEHAVIORAL INTENTIONS OF HEALTHCARE STAFF WITH RESPECT TO ICT

Behavioral intentions of healthcare staff with respect to ICT was measured in terms of the *behavioral intention* components in the CAS (Selwyn, 1997). All 100 participants responded to all items in the CAS and no missing data was found in the survey. Table 2 presents the participants' mean scores with the standard deviations. 36 participant were male and 64 participant were female. The mean years of computer use was 8.46 years (SD = 5.281) and work experience in healthcare was 16.56 (SD = 10.318).

Table 2: Descriptive statistics

#### Descriptive Statistics

	Mean	Std. Deviation	N
Health Experience	16.56	10.318	100
Computer Experience	8.46	5.281	100
Own Computer	.83	.378	100
Own Laptop / Notebook	.68	.469	100
Own Smartphone / Tab	.54	.501	100
Use Personal Computer	1.35	1.132	100
Use Laptop / Notebook	.78	.690	100
Use Smart Phone / tab	.54	.501	100

'Behavioural Intention', is composed of four items that measure behavioural intentions with respect to computers (Teo, 2008). Frist three items which scoring is reversed. (Table 1)

#### **B1: I would avoid taking a job if I knew it involved working with computers**

There were 94% participants strongly disagree and 6% participant were disagree for this item (Table 2). In detail there were 89% male participant and 97% female participant strongly disagree for this item (Table 3). This question was reverse scoring item. Therefore participant had negative response for this item. It depict that most of healthcare staff having positive thinking for works that related to the ICT.

#### **B2: I avoid coming into contact with computers in hospital**

There were 99% participants strongly disagree and 1% participant were disagree for this item (Table 2). In detail there were 97% male participant and 100% female participant strongly

comprise the largest part of the health workforce, their acceptance of information and technology systems will be mandatory for implementation of ICT (Eley et al., 2009).

### **3. METHOD**

#### **3.1 SAMPLE**

The participants in this research were 100 Health care staff enrolled in western region at Lady Ridgway Hospital for Children (LRH) represent Colombo district, Colombo North Teaching Hospital – Ragama represent Gampaha district, hospital from Kaluthara district. Among the 100 participants enrolled in healthcare staffs, 28 were doctors, 28 were paramedical staff, 28 were nurses, and 16 were development officers. All participants were volunteers no intension were given for participants.

There were 64 females (64%) participants and 36 were male (36%). The average number of years of computer use was 8.46 years (SD=5.281).

#### **3.2 PROCEDURE**

Data was collected from the participants on a voluntary basis using face to face interview with structured questionnaire. After a brief introduction to the research, interviewed participant with structured questionnaire. On the average, interview took 10 minutes for one participant to complete the survey. There were also no queries from the participants and noted their personal impression about ICT, relating ICT to their work place.

#### **3.3 INSTRUMENT**

The instrument included sections on participants' demographic background, computer experience, and the *Computer Attitude Scale* (CAS), developed by Selwyn (1997). Computer experience in this study was measured by asking the participants "On average, how many years have you used the computer?"

The CAS was used to measure behavioral intentions of government healthcare staff with respect to ICT use in western region. It is a questionnaire that consists of four components of computer attitudes. The first component, 'Affect', is measures feelings towards computers. 'Perceived Usefulness' is measure the individual's beliefs about the usefulness of computers in their job. 'Perceived Control', is measure the perceived comfort level or difficulty of using computers. The fourth component, 'Behavioural Intention', is measure behavioral intentions and actions with respect to computers (Table 1). In this research primarily emphasis on fourth component of CAS. Participants responded to the CAS using a five-point scale of strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). The scores from the items on each component were aggregated to provide individual scores on each component. In this study, the negative items were reversed coded in order that meaningful analyses at the sub-scale level could be conducted.

The CAS has been found to be a reliable instrument to measure attitude towards computers. Using the CAS on 131 undergraduate students in early childhood education, Sexton, King, Aldridge and Goodstadt-Killoran (1999) reported that the CAS possessed high reliability (alpha = 0.90).

of the benefits of computerization. A less positive attitude or rejection is likely to retard attempts to modernize service delivery (Kipturgo et al, 2014).

Computers are among the many facets of information communication and technology that have rendered the wide world a village (Bond, 2007). In most parts of the globe, especially the developed nations, computers are used in almost all spheres of life (Kuroda et al, 2007). Computers are ubiquitous accessories in all sectors of the economy, from the banking sector, transport, engineering, education, health sector.

Therefore, as we move into a technology based society, it is important that healthcare staff IT experiences with technology be equitable and unbiased for males and females

The aim of this study is to examine the profile of a sample of state healthcare staff in western region in Sri Lanka. Specifically, the following question will be answered:

1. Do behavioral intentions of healthcare staff with respect to ICT, avoid integration ICT to the healthcare?

## **2. LITERATURE REVIEW**

Introduction of Computer applications to the healthcare systems have international significance. Around the world use of IT are taking place with increased employment of electronic health records, automated administration and increased electronic sharing of patient information. The importance of IT in the National Health Service modernization agenda in UK has been underpinned by several reports and its role in increasing patient safety and reduction of errors (Committee on Identifying and Preventing, 2006). There is also a large and growing body of literature about aspects of health informatics related to policy, hardware, software and implementation. One of the factors identified as significant in the introduction of information technology into health care practice is the attitude of staff that will be required to use it. In the UK surveys undertaken by Medix (a market research company in the health sector) found that the attitudes of doctors and nurses have shown increasingly negative attitudes (Medix. Medix UK plc survey. 2006). Further, it was stated by Rod et al (2008) that attitudes of health care professionals can be a significant factor in the acceptance and efficiency of use of IT.

Over twenty years ago, Stronge and Brodt (1985) were studying this area in the USA with their Nurses' attitudes towards computers and others have continued this work, using similar instruments with different findings. Sultana (1990), McBride and Nagle (1996) found more positive attitudes in using ICT among students than qualified staff, but Scarpa and Smeltzer (1992) found no differences in attitude with nursing experience or educational level, but had found that experience with computers was significant. In addition, it has been found that attitude changes with gender differences (Schwirian et al., 1989).

In Kenya, the use of computers in hospitals is not a widespread practice. Computerization of hospital services has been embraced in some private hospitals and government hospitals. The extent of such computerization is limited to non-clinical departments such as general administration, finance and procurement. Medical or health records department's computerization serves these non-clinical departments more than it does the clinical ones (Kipturgo et al., 2014).

According to Ragneskog and Gerdner (2006), computers are no longer confined to hospitals but have been introduced in nursing homes and even in long-term facilities. Since nurses

# BEHAVIORAL INTENTIONS OF HEALTHCARE STAFF WITH RESPECT TO ICT IN WESTERN REGION OF SRI LANKA

Dileep, A.H.<sup>1</sup> and Wijayanayake, W.M.J.I.<sup>2</sup>

<sup>1</sup>Faculty of Science, University of Kelaniya, Sri Lanka

<sup>2</sup>Department of Industrial Management, University of Kelaniya, Sri Lanka

## Abstract

*Computers are increasingly widespread, influencing many aspects of our social and work lives, as well as many of our leisure activities. As more tasks involve human computer interaction, computer skills and knowledge have become more positively correlated with both occupational and personal success. In most parts of the globe, especially the developed nations, computers are used in almost all spheres of life.*

*Healthcare staffs are change agents in healthcare sector. They are key drivers who play crucial role in ICT integration in healthcare. The aim of this study is to examine the behavioral intentions of healthcare staff with respect to ICT in western region of Sri Lanka. A sample of 100 healthcare staff was assessed for their behavioral intentions with respect to ICT using a Likert type questionnaire. There were 64 females (64%) participants and 36 were male (36%). The average number of years of computer use was 8.46 years (SD=5.281). There were 84% participants strongly agree and 16% participant were agree for use ICT regularly for their official work in healthcare. In detail there were 78% male participant and 88% female participant strongly agree for use ICT regularly for their official work in healthcare.*

*Behavioral intentions of healthcare staff with respect to ICT have positive responses in western region of Sri Lanka. The results of this study showed no gender differences among healthcare staff on behavioral intentions with respect to ICT. They are willing to accept, integration of ICT to the process of healthcare systems. This study clearly depict that behavioral intention of healthcare staff with respect to ICT are not the bottleneck for integration of ICT to the State hospitals in western region of Sri Lanka.*

**Keywords:** eHealth, ICT for healthcare, ICT adaption for hospital, Healthcare staff attitude for ICT, Behavioral intentions of healthcare staff with respect to ICT

## 1. INTRODUCTION

Computers are increasingly widespread, influencing many aspects of our social and work lives, as well as many of our leisure activities. As more tasks involve human computer interaction, computer skills and knowledge have become more positively correlated with both occupational and personal success.

Contemporary healthcare faces a many changes on account of emerging and re-emerging diseases but nothing will change the way health care is provided more than the current advances in information communication and technology. Nursing, being an integral part of the healthcare delivery system, is exposed continually to a variety of changes (Smedley, 2005). For instance, the introduction of computers can elicit diverse feelings among healthcare staff. A positive attitude could see a rapid adoption with accompanying realization



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## Testing Hypotheses

H1— Endogenous factors directly affect success of projects. In this regard, P-value of the coefficient of endogenous factors (0.05) should be taken into account. R<sup>2</sup> is 88%. And also; correlation coefficient between endogenous factors and success of projects is 0.98 and is statistically significant at 95% confidence level. Thus, respective hypothesis can be accepted. H2 - Exogenous factors and success of projects are positively related.

Respective P-value of coefficient of exogenous factors is mostly significant (0.07) and R<sup>2</sup> is 0.88. And also; correlation coefficient between exogenous factors and success of projects is 0.98 and is statistically significant at 90% confidence level. Thus, respective hypothesis can be accepted.

## 5. CONCLUSION

This is an empirical investigation into determinants of success of Foreign Financed Development Projects in Sri Lanka. Nonetheless, the preliminary results are interesting and potentially informative. It was empirically found, consistent with the analytical framework, that the success of these projects is important for understanding degree of influence made by respective determinants. A great influence is made by endogenous factors such as managerial functions of these projects and cohesiveness of the personnel working there. An intriguing aspect of this result is that malpractice of management would cause a poor achievement of goals in these projects.

Another finding was that exogenous factors also make influence on success of these projects but compared to influence made by endogenous factors it is somewhat not high. And also, the success of these projects is highly responsive to leadership and infrastructure facilities. This trend suggests that these projects will continuously be forced to adapt to a more stringent internal and external environment, even as the government should pay much more attention on new ways to develop this particular type of projects in Sri Lanka.

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projects by 0.12. P-value is 0.01 and it indicates that at 90% level of probability, coefficient is not statistically significant. Gradient values of these components are statistically significant at 98% level of probability. The respective value of R<sup>2</sup> is 0.8 and "F" value is statistically significant at 98% level of probability. They indicate these components strongly affect success of considering projects.

Analysis of variances (ANOVA) was also made in order to examine the relevance of applying regression technique. Results of this analysis are given below. (Significance level is 0.01 of probability)

	Total value of Squares	Df.	Mean Square of squares	F	Significance
Regression	9.51	3	3.2	3306	0.004
Residual	0.32	2.86	0.0012		
Total	9.81	2.88			

As "F" value is 3306 it can be concluded that applying regression technique is highly significant. Results of multiple regression analysis made for aggregate projects are revealed by the following table.

	t.stat.	P. Value	Coefficients
Endogenous Factors	10.32	0.05	0.12
Exogenous Factors	22.12	0.07	0.04
Intercept	1.55	0.13	0.02

These figures indicate that there is a direct relationship between couple of independent factors and success of projects. As implied by the R<sup>2</sup> it is understood that 88% of variation of success of projects is shown by independent variables.

In considering the gradient value of 0.12, it seems that increase in endogenous factors by one unit leads to increase score value relevant to success of projects by 0.12. P-value implies that statistical significance occurs at 95% level of probability.

In case of exogenous factors it is appeared that increase in those factors causes to make an increase in score value pertaining to success of projects by 0.04. P-value shows the statistical significance takes place at 90% level of probability.

Here, gradient values of respective independent variables and intercept values are statistically significant at 10% level of probability. And also the relevant R<sup>2</sup> is 0.88, when "F" value is statistically significant at 98% level of probability. Thus, the finding is that there is a considerable relationship between couple of independent variables and success of considering projects.

#### 4. RESULTS OF THE DISCUSSION

The following table shows the mean values and values of standard deviation computed for success of projects and respective scores relevant to independent variables that make influences on success of projects.

Variables	Mean	Standard Deviation
Success of Projects	66	3.5
Endogenous Factors	3.5	0.2
Exogenous Factors	3.0	0.4

The table indicates that on an average, success of projects is at satisfactory level as its mean value becomes 66. If any factor possesses more than three score value that factor is considered as high influential variable relating to success of projects. Accordingly, it is understood that endogenous factors strongly affect success of considering projects. Compared to endogenous variables it seems that no considerable influence is made by exogenous factors on success of projects. In considering the values of standard deviation, it is notable that low values of it lead to get mean values to closer point. Thus, finding is that in achieving optimistic results from considering projects endogenous factors should be highly focused. Here, correlation analysis was also made to examine the level of linear correlation that lies between couple of independent variables under this, if "r" value is closed to one, the relationship becomes too strong and if it is closed to zero linear correlation becomes almost nil. According to the calculations made following correlation values were obtained.

	Success Index	End. F.	Exo. F.
Endogenous Factors	0.97	1	
Exogenous /factors	0.98	0.46	1

At 0.01 level, correlation coefficient of couple of factors is significant. Here correlation between couple of factors is not dominant but it becomes significant. So, the finding is that if these factors are managed well, success of projects can be improved.

Endogenous factors were reviewed with success of planning process, group performance, contribution of superior staff in projects, leadership, allocation of resources and controlling process. To the results of correlation analysis made in respect of these components, it was found that correlation coefficients of planning, group performance, and performance of superior staff and success of leadership were statistically significant at 61% confidential level. Moreover, it was found that correlation between allocation of resources and leadership was 0.88. This implies that respective correlation is statistically significant. Also, it was noted that there is a pessimistic relationship between planning process and controlling process because of respective correlation coefficient is -0.73. Anyway, the notable matter is that all these components strongly affect the improvement of success of these projects.

Exogenous factors were also analyzed under the components of security of sites, price changes, possible displacement in zones, possible disasters, availability of raw materials and land mines. Accordingly, it was found that gradient value of those components is 0.12. It implies that increase occurring in those components by one unit leads to increase success of

Based on the above conceptual framework following two hypotheses were also formulated.

**H<sub>1</sub>:** Endogenous factors directly affect success of projects.

**H<sub>2</sub>:** Exogenous factors and success of projects are positively related.

### 3. MEASURES

Here, mean values and standard deviation computed with the aid of five point scale in respect of endogenous and exogenous factors were applied to present the respective data. The continuum was designed by including the range running from strongly agree to strongly disagree. Weightages or values of 5,4,3,2, and 1 were allocated to the responses taking the direction of the questions into consideration. With regard to 15 questions on operationalizing the extent of influence, the following score values are presented.

15 x 5 = 75	satisfactory responses
15 x 4 = 60	
15 x 3 = 45	neutral responses
15 x 2 = 30	
15 x 1 = 15	unsatisfactory responses

Unsatisfactory response lies between 15 and 35, any score between 35 and 55 refers to a mediocre responses. Also, scores between 55 and 75 would mean a satisfactory responses. Having worked out the categorization, for presenting and analyzing the data, ANOVA technique, Pearson's coefficient of correlation analysis and multiple regression analysis were employed.

#### Reliability and Validity

The reliability of a measure indicates the extent to which it is without bias (error free) and hence ensures consistent measurement across time and across the various items in the instrument (Uma sekaran, 2006). In other words, the reliability of a measure is an indication of the stability and consistency with which the instrument measures the concept and helps to assess the "goodness" of a measure.

Under the validity the authenticity of the cause-effect relationships (internal validity) and their generalizability to the external environment (external validity) are concerned (Uma sekaran, 2006). Validity refers to the extent to which an instrument measures what it is supposed to measure. (Kothari, 1995). The most popular test of interitem consistency reliability is the Cronbach's coefficient alpha. (Cronbach's alpha; Cronbach, 1946) which is used for multi-point-scaled items, and the Kuder-Richardson formula (Kuder and Richardson, 1937) was used for dichotomous items. The higher the coefficients, the better the measuring instrument would be reliable when it gives consistent results. (Tuckman, 1972, Kothari, 1995.).

The reliability of the scores obtained at the two different times from one and the same set of respondents were tested with test-retest-method. The test-retest coefficients were 0.91 and 0.93 for success of projects and other two factors respectively. A very good interitem reliability was noted as the Cronbach's alpha was 0.8410 respectively.

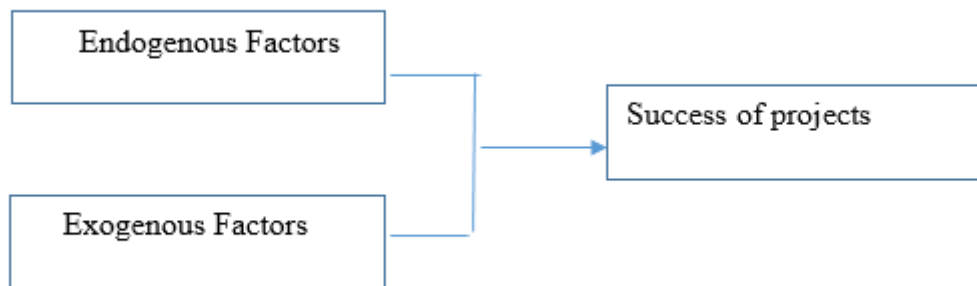
2006). Project Management: can be defined as planning, directing and controlling resources (people, equipment and material) to meet the technical cost and time constraints of the project. In this case, leadership plays a key role. In particular, leadership styles of managers are vital in managing a project to achieve higher performance. Leadership is generally defined as influence, the act or process of influencing people so that they will strive willingly towards the achievement of group goals. (Koontz and O'Donnell, 1996, P.587). Leadership style is the term used to refer to the typical or consistent behaviour that a leader tends to use while interacting with subordinates. (Hitt et.al, 1979, p.270). Professional project managers are individuals skilled at not only the technical aspects of calculating such things as early start and early finish time but, just as important, the people skills related to motivation. (William, P.B, 1996). In addition, the ability to resolve conflicts as key decision points occur in the project is a critical successful project is the best way to prove the promotability to the people (Gray, C.F, 2002). Virtually, all project work is team work and leading a project involves leading a team. (Devaux, S.A. 1999) Success at leading a project will spread quickly through the individuals in the team. (Lewis, James. P, 1999). As organizations flatten (through reengineering, downsizing, and outsourcing), more will depend on projects and project leaders to get work done, work that previously was handled within departments. (Smith Daniels, D.E. and N.J. Aquilano. 1984). Thus project leaders should enhance the skills needed to manage people, time and results of the projects. (William, P.B. 1996.) In particular, a better scheduling policy should be formulated. Scheduling with material ordering is essential for achieving success. (Smith-Daniels, E.E. and V. Smith Daniels, 1987).

In this context, system approach to planning, scheduling and controlling the projects is highly required. (Kerzner, 2002) Accordingly, the central problem addressed in this paper is related to how well foreign financed development projects function in Sri Lanka.

## 2. RESEARCH FRAMEWORK

In constructing the conceptual framework, major two independent variables namely endogenous and exogenous factors extracted from the respective literature review were based. Here endogenous factors represent managerial components while exogenous factors are related to external -linking components. And also, success of projects was considered as the dependent variable. The following schematic diagram shows the conceptual framework administered throughout this study.

**Figure 01: Conceptual Framework**



# AN EMPIRICAL INVESTIGATION INTO DETERMINANTS OF SUCCESS OF FOREIGN FINANCED DEVELOPMENT PROJECTS IN SRI LANKA

Ubayachandra, E.G.<sup>1</sup> and De Silva, S.K.D.U.<sup>2</sup>

<sup>1</sup>*Department of Marketing Management, Faculty of Commerce & Management Studies  
University of Kelaniya  
eubayachandra@gmail.com*

<sup>2</sup>*Department of Marketing Management, Faculty of Commerce & Management Studies  
University of Kelaniya  
udeshi.desilva.sk@gmail.com*

## Abstract

*By this empirical study it was aimed to investigate into the factors that affect the success or performance of foreign financed community based development projects in Sri Lanka. Out of the 548 existing project implementing organizations (Action Plan 2006) for the convenience of the analysis 64 organizations covering 15 districts were taken into consideration. The selected organizations are mixed with UN organizations, government and semi-government ventures, international NGOs, local and national NGOs. For collecting data 250 questionnaires which were received back without rejection were administered among the selected organizations. The key purpose of the study was to evaluate the influence made by identified couple of factors on success of considering projects. Specific objectives were to examine the interrelationship between main two factors and to identify the influence made by infrastructure facilities on success of these projects. For this purpose three research questions were addressed. They are; what is the degree of influence made by two factors on success? What is interrelationship between two factors? What is the influence made by infrastructure facilities on success? Success of the projects was estimated in terms of allocation of resources, goal attainment and other impacts associated with productivity and quality improvement. Univariate analysis and bivariate analysis were employed in analyzing the data. Furthermore, "t" test and "F" test were applied for testing respective two hypotheses. In computing P value it was considered that for high significant level it should be equal to 0.05 and for it significant level should be equal to 0.10. For more clarification SPSS computing software version was associated. As indicated by the results of discussion it was noted that though both endogenous factors and exogenous factors make influence on success of projects, a dominant and vital role is played by endogenous factors in determining the performance of community based development projects in Sri Lanka. Thus a great attention should be paid on endogenous factors in strategically planning and implementing these projects.*

**Keywords:** Endogenous Factors, Exogenous Factors, Determinants, Reliability, Validity, Performance, Projects, Leadership

## 1. INTRODUCTION

A project may be defined as a series of related jobs usually directed towards some major output and requiring a significant period of time to perform. (Chase, Jacobs and Aquilano



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The cost reduction of acoustic materials is an important factor in current development of noise control issue. Usually some natural bio granular materials are considered to be waste materials with almost of no cost to be used as potential acoustic absorbers. Using natural waste materials and omitting health hazard processing steps are the promising strategies to trigger the use of these natural waste granular materials for future industrial mass market applications.

#### **4. CONCLUSION**

The promising absorption behavior of granular composites can be anticipated through the formulation of suitable analytical models for the enhancement of low frequency acoustic absorption. Three models - Delany-Bazley, Biot-Allard and Johnson-Champoux-Allard can be considered as efficient analytical tools for the evaluation of the acoustical parameters of the granular materials.

Grain size is the most influential parameter for enhancing low frequency acoustic absorption. An optimum amount of pores can be formed by adding binder. The flow resistivity of a porous material is directly proportional to the value of its sound absorption coefficient at certain extent. The smaller the grain size, the higher the value of acoustic absorption coefficient. Influence of grain size has a considerable effect on the acoustic properties of granular composite materials. For large grains, the absorption is generally low due to low flow resistivity, but for smaller grains the absorption increases due to high flow resistivity and tortuosity.

Natural granular materials such as rice husk, pine saw dust, and wood shavings have great potential for commercialization as low frequency sound absorbent material parallel to traditional expensive granules. The increase in sample layer thickness plays a significant role for the enhancement of low frequency sound absorption. The reason is the increase in layer thickness forces the impinged sound waves to undergo a long dissipative procedure of viscosity and thermal conduction in the air within the composite. Hence promotes the sound absorption due to more energy dissipation.

The industrial manufacturing of the acoustic absorbers from waste residues will contribute to the environmental protection, waste management and noise pollution solutions that are cheaper than the traditional alternatives. The review rests the hopes of the enormous possibility in commercialization of the waste granular materials as cost effective sound absorbent materials for acoustic absorption purpose. It postulates that industries will be benefited of applying the said findings and thoughts discussed in this paper to gain competitiveness for the respective firms whilst contribution to substantiality through the cost competitive business models.

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Allard model. At 1000 Hz and 30mm thickness, the value of sound absorption coefficient was reported as 0.85 for PVC carpet grain and 0.87 for tyre shred residue (Khan, 2008). Mahzan, Zaidi (2009) made a comparison study among rice husk, rubber granulate and woods shaved material. They investigated the acoustic performance of 25% rice husk, rubber and wood shavings together with a polyurethane binder. Among them rice husk showed the best performance compare to other two materials. A comparison study of sound absorption coefficients for rice husk with rubber and woods shaved materials is furnished in table-1.

**Table1. Acoustic absorption performance of bio and rubber granular materials**

Materials	Sound Absorption Coefficient
Rice Husk	0.9
Rubber grains	0.583
Woods shaved	0.484

The significant role of grain size for the enhancement of low frequency acoustic absorption is illustrated in table-2 for various granular materials

**Table-2. The value of sound absorption coefficient at 1000Hz and 40mm thickness (Sikora & Turkiewicz, 2010).**

Materials	Grain size (mm)	Sound absorption coefficient
Rubber	1x2-4	0.861
Polipropylene	4-6	0.731
Gravelite	3-15	0.643

The above observation indicates that the grain size is inversely proportional to the value of sound absorption coefficient. The reason can be explained by the fact that smaller grains shows the higher flow resistivity than the larger grains(Swift, Bris, & Horoshenkov, 1999). The production of the acoustic materials from natural substances are cost effective and has lower environmental effect than the traditional materials. The cost of some traditional and natural acoustic materials is furnished in table-3.

**Table-3: Comparison on commercial values for some traditional and natural sound absorptive materials(Asdrubali, 2006)**

Acoustic Materials	Cost (€ /m <sup>2</sup> )
Cork	19
Glass Wool	12
Expanded Polystyrene	12
Hemp	5
Flax	7

two acoustical parameters such as, effective density and bulk modulus of rigid porous material are introduced. The expression for the effective density  $\rho(\omega)$ , rigid framed porous materials having arbitrary pore shapes, was introduced by Johnson et al. (1987) which can be expressed as:

$$\rho(\omega) = \alpha_{\infty} \rho_o \left[ 1 + \frac{\sigma \phi}{j \omega \rho_o \alpha_{\infty}} \sqrt{1 + \frac{4 \alpha_{\infty}^2 \eta \rho_o \omega}{\sigma^2 \Lambda^2 \omega^2}} \right] \quad (11)$$

The bulk modulus of the fluid of rigid framed porous materials was introduced by (Allard, 1993). Champoux and Allard (1991) in development of previous work by Johnson et al. (Johnson et al., 1987) Two parameters which are- open porosity( $\phi$ ) and the thermal characteristics length ( $\Lambda'$ ) are involved in the calculation of dynamic bulk modulus  $K(\omega)$  (Allard, 1993).

$$K(\omega) = \frac{\gamma P_o}{\gamma - (\gamma - 1) \left[ 1 - j \frac{8k}{\Lambda'^2 N_p \rho_o \omega} \sqrt{1 + j \frac{\Lambda'^2 N_p \rho_o \omega}{16k}} \right]^{-1}} \quad (12)$$

In general the acoustic absorption properties of porous material are defined by the characteristic impedance  $Z_c(\omega)$ , the complex wave number  $k_c(\omega)$ , surface acoustic impedance  $Z$  and the absorption coefficient ( $\alpha$ ). The expressions of  $Z_c(\omega)$ ,  $k_c(\omega)$  can be evaluated by the following equations (Allard, 1993; Cox & Dantonio, 2009; Kino, Ueno, Suzuki, & Makino, 2009):

$$Z_c(\omega) = \frac{1}{\phi} \sqrt{\rho(\omega) \cdot K(\omega)} \quad (13)$$

$$k_c(\omega) = \omega \sqrt{\rho(\omega) / K(\omega)} \quad (14)$$

For normal incidence sound waves, the well-known relationship between the surface impedance of a layer of porous material with thickness  $d$ , backed with rigid wall is:

$$Z = Z_c(\omega) \cdot \coth(k_c(\omega)d) \quad (15)$$

The expression of sound absorption coefficient ( $\alpha$ ) of a porous material in terms of surface acoustic impedance of porous layer ( $Z$ ) and impedance of air ( $Z_o$ ) can be stated as:

$$\alpha = 1 - \left| \frac{Z - Z_o}{Z + Z_o} \right|^2 \quad (16)$$

### 3. RESULTS AND DISCUSSION

To predict the acoustical behavior of pine saw dust and rubber granular material, Borlea et al. (2012) calculated the sound absorption coefficient by using Delany-Bazley model. Outcome of the investigation was validated by an experiment which was conducted in impedance tube method. They reported increasing in sample layer significantly improve the sound absorption performance of the materials. The study also confirmed that the Delany-Bazley model was a good approximation for overall broadband trend of acoustical behaviour. The sound absorption. A good sound absorption performance of PVC carpet grains and tyre shred residue at suitable binder ratio was observed by employing the Johnson-Champoux-

acoustic impedance ( $Z$ ) of the porous layer while backed with a rigid wall can be obtained as (Dunn & Davern, 1986; Lee & Chen, 2001):

$$Z_c = \rho_0 c_0 [1 + 0.057b^{-0.754} - i(0.087b^{-0.732})] \quad (6)$$

$$k = \frac{2\pi f}{c_0} [0.189 b^{-0.595} + i(1 + 0.0978b^{-0.7})] \quad (7)$$

$$Z = Z_c \coth(k.d) \quad (8)$$

Where:

$\rho_0$  = Air density;

$c_0$  = Speed of sound in air;

$f$  = Sound wave frequency;

$d$  = Thickness of porous layer;

$b = \frac{\rho_0 f}{\sigma}$  = Dimensionless parameter; the model is applicable only for  $0.01 \leq b \leq 1.0$ .

The flow resistivity limit is  $1000 \leq \sigma \leq 50000$  N.s m<sup>-4</sup> and porosity close to 1 for this technique.

### ***Elastic Frame Method: Biot-Allard Model***

The theory of propagation of elastic wave in a porous sound absorbing materials was developed by (Biot, 1956a, 1956b) which is referenced in this investigation to address the elasticity of the frame. Hence the frame and fluid are assumed to be in motion.

In order to calculate the surface acoustic impedance of the material at normal incidence, some other parameters are also involved in this model, which are- Poisson coefficient, and bulk modulus of fluid and frame. The expression of the frequency dependent bulk modulus of fluid  $K_f(\omega)$  and the bulk modulus of frame  $K_b$  can be stated as:

$$K_f(\omega) = \frac{\gamma P_0}{\gamma - (\gamma - 1) \left[ 1 + \frac{8\eta}{jA'^2 N_p^2 \omega \rho_0} \left( 1 + j\rho_0 \frac{\omega N_p^2 A'^2}{16\eta} \right)^{1/2} \right]^{-1}} \quad (9)$$

$$K_b = \frac{2N(\nu+1)}{3(1-2\nu)} \quad (10)$$

Where,  $\eta$  = Viscosity of air,  $\gamma$ = ratio of specific heat at constant pressure to specific heat at constant volume,  $P_0$  = Atmospheric pressure,  $N_p$ = Prandtl no,  $N$  = Shear modulus and  $\nu$ =Poisson coefficient.

Generally two compression waves and one shear wave propagate simultaneously in a porous medium. Among two compression waves one is elastic compression wave and another one is acoustic compression wave. Shear wave is considered when the sound waves propagate at oblique incidence. As the study only considers the propagation of sound at normal incidence hence only two compression waves are mentioned here to predict the propagation constant and surface acoustic impedance of the material(Biot, 1956a, 1956b) and (Allard, 1993).

### ***Rigid Frame Method: Johnson-Allard Model***

Rigid frame model can be implemented for the analytical prediction of propagation constant and surface acoustic impedance of fibrous material. Here the frame is assumed to be motionless so considered to be simpler method than the Biot model. In Johnson-Allard model

Rice husk and rice straw are two widely abundant agricultural residual wastes, which exist due to the cultivation of rice crop. The potential of these two products are reported to be used as an important resource of renewable energy. But unfortunately this energy gets wasted by open burning while disposed for the next crop which leads to the environment pollution by carbon emission. (Lim, Manan, Alwi, & Hashim, 2012).

Mahzan et al. (2009) studied the acoustic properties of rice husk. and was found the value of sound absorption coefficient is 0.899 at frequency 250 Hz. The study reported that the absorption performance of rice husk is better than virgin polyurethane and is predominant at the lower frequency.

The aim of the paper is to investigate the opportunities to improve the value of the sound absorption coefficient of conventional and natural granular materials at low frequency region in terms of three analytical models by considering the materials various physical parameters.

## 2. THEORETICAL CONSIDERATIONS

In order to specify the acoustical properties of any porous materials two parameters are needed to be evaluated which are- characteristic acoustic impedance and the propagation constant. Based on various theoretical overview it was assumed that simple method Delany-Bazley is consist of one and only intrinsic property which is flow resistivity. Elastic frame Bio-Allard and rigid frame Johnson-Allard models are consists of five non-acoustical parameters, which are- flow resistivity ( $\sigma$ )(Voronina & Horoshenkov, 2003), porosity ( $\varphi$ )(Cox & D'antonio, 2009), tortuosity ( $\alpha_\infty$ ) (Allard, 1993; Johnson, Koplik, & Dashen, 1987), viscous ( $\Lambda$ ) (Johnson et al., 1987)and thermal ( $\Lambda'$ ) (Champoux & Allard, 1991) characteristics length. In order to evaluate the propagation constant, surface acoustic impedance and sound absorption coefficient of any porous material the above five parameters are needed to be defined. The expression of these important five non-acoustical parameters for loose granular materials can be stated as follows:

$$\sigma = \frac{400(1-\varphi)^2(1+\varphi)^5\mu}{\varphi D^2} \quad (1)$$

$$\varphi = 1 - \frac{\rho_{bulk}}{\rho_{grain}} \quad (2)$$

$$\alpha_\infty = \frac{1}{\sqrt{\varphi}} \quad (3)$$

$$\Lambda = \frac{1}{2\pi r l} \quad (4)$$

$$\Lambda' = 2\Lambda \quad (5)$$

Where,  $\rho_{bulk}$  is the density of granular material,  $l$  is the total length of the grain per unit volume,  $\rho_{grain}$  is the specific density of grains,  $\mu$  is the dynamic viscosity of air and  $D$  is the characteristic dimension of grain particle.

### **Simple Method: Delany-Bazley Model**

It is a simple and first approximation model which derives the empirical relationship relating the propagation constant and characteristic impedance to the flow resistivity of a layer of isotropic and homogenous porous material. (Delany & Bazley, 1970). The acoustic parameters such as characteristic impedance ( $Z_c$ ), the propagation constant ( $k$ ) and surface

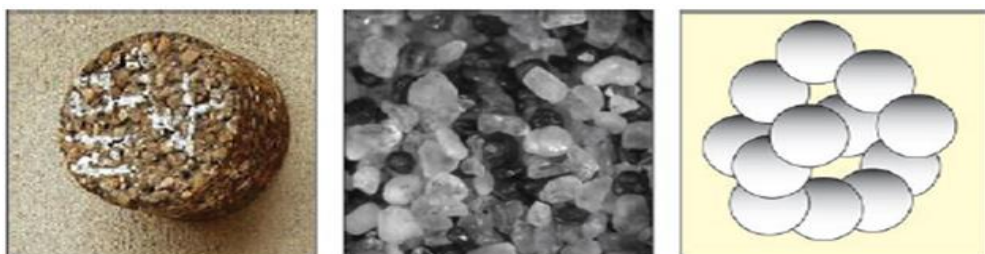
The more energy dissipation is due to more interaction of air molecules with the grain surface results in higher sound absorption of the material. . The sound absorption performance of the granular absorbent is improvable by forming bridges rather than flat boards(Cox & D'antonio, 2009). A study reported that the internal surface area in a granular composite is inversely proportional to the grain size while the flow resistivity is directly proportional to the internal surface area. The study also reported that unconsolidated granulates of grain sizes between 0.71 and 1mm and consolidated material the grain size of <2mm exhibit higher flow resistivity on the condition of applying binder at a suitable ratio. The report can be explained by the fact that smaller grains show higher flow resistivity than larger grains, leading to higher acoustic absorption performance. (Swift, Bris & Horoshenkov, 1999).

In 2002, the sound absorption performance of the rubber granular diameters ranging from 1.4 to 7mm was investigated by (Pfretzschner, 2002). The study repeatedly reported the inverse relationship between the grain size and the value of sound absorption coefficient at constant given thickness.

Smaller size of grains leads to higher value of flow resistivity and consequently of sound absorption coefficient compare to the bigger grain size. The highest values of sound absorption coefficient can be achieved for the grain size of 1-2mm was reported by (Asdrubali, D'Alessandro, & Schiavoni, 2008).

In consolidated granular materials the particles are relatively rigid and macroscopic and their dimensions are greater than those of the internal voids by many orders of magnitude. Unconsolidated materials are the assemblages of loosely packed individual particles. The example of some granular absorbing materials are granular clays, sands, gravel, limestone chips and soil which are perfect in controlling outdoor sound propagation(Iannace, Ianniello, Maffei, & Romano, 1999; Sikora & Turkiewicz, 2010).

The solid structure in rigid porous materials is perfectly rigid and stationary. The granules are separated by the interconnected voids where the air is hold. Air is a viscous fluid and the sound absorption takes place due the viscous friction of air with the pores wall. The sound energy converted into heat energy in isothermal heat transfer process, at low and high frequency region. as well as viscous effect the energy scattered from the granules also has significant effect in sound absorption of granular materials (Arenas & Crocker, 2010). Figure-1 shows the structure of granular materials with its typical microscopic arrangement.



**Figure-1: The structure of granular materials**

Source: Arenas & Crocker, 2010



# A REVIEW ON THE ACOUSTIC ABSORPTION PERFORMANCE OF VARIOUS GRANULAR MATERIALS- THE COST-EFFECTIVE ACOUSTIC ABSORBERS FOR COMMERCIALIZATION

Mamtaz, H. <sup>1,\*</sup>, Fouladi, M.H.F.<sup>2</sup> and Al-Atabi, M.<sup>3</sup>

<sup>1,2,3</sup> Department of Mechanical Engineering, Faculty of Engineering, Taylor's University, Malaysia

\*Hasina Mamtaz, hasina\_ctg@yahoo.com

## Abstract

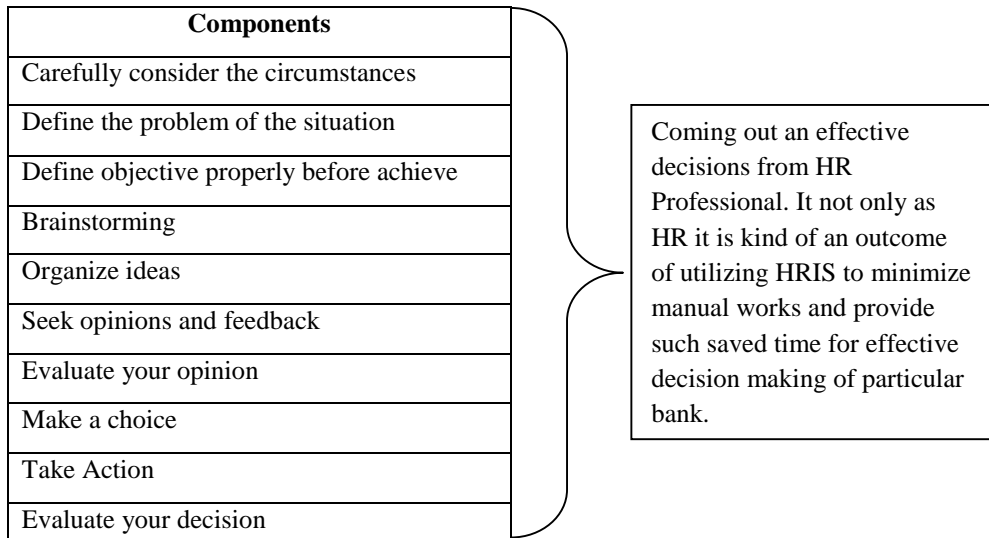
*The utilization of recycled rubber and natural granular materials in the production of acoustic absorbers can help the vicinity of solving the problem of the disposal of waste material and noise pollution. The present paper reviews the analytical and experimental analyses of various granular materials aimed at the determination of their acoustic properties in terms of various analytical models. The acoustic absorption performance of the traditional rubber and natural granular materials was investigated in terms of grain sizes, flow resistivity and sound absorbing coefficient. The study reported that the effectiveness of the acoustic absorption performance of the granular materials increases with decrease in their sizes. The acoustic absorption performance of rubber crumbs, pine saw dust and rice husk have reported as good acoustic materials with a broad band absorption spectrum. The acoustic absorption performance of the above mentioned granular materials help to determine the potential of biomass granular material as a sustainable and cost effective acoustic absorber to be used at indoor and outdoor applications for sound absorption purpose. This review aimed to investigate the potentially applicable analytical approaches in order to understand the sound absorption properties of recycled waste granular materials. Furthermore the study contributes to the body of knowledge of the beneficial way of waste management by confronting the volatile price of traditional acoustic absorber. The insights of the paper may service for the business sector managers to commercialize the said concept and operational content to gain competitive advantages through cost effectiveness.*

**Keywords:** Acoustic absorption, recycled rubber and natural granular materials

## 1. INTRODUCTION

In order to improve our living environment, noise control is one of the major requirements at the present time. Due to the growing concern in health and environment issues there is a great interest has noticed in using the recycled materials and green technology resources for acoustic treatment. The acoustic absorbers from recycled and natural granular materials have drawn considerable interests in noise reduction for building construction, automotive sectors, and room interior surface and household applications. The recycled and natural granular materials are sustainable, non-combustible and moisture resistant acoustic absorption materials. There are two kinds of granular materials which are consolidated and unconsolidated or loose granular materials. The sound absorption performance of any porous materials is influenced by two main parameters which are pore size and porosity. The air flow resistivity of the porous structure is controlled by pore size and porosity. The pore size in a granular composite is controlled by the grain size. The viscous and thermal effects which are responsible for the dissipation of incident sound wave energy is controlled by the pore size.

According to the solutions provided by the Author, to minimize the manual works will help to save human hours of HR Professionals. So that such time can be used for effective decision making in order to achieve such banks objectives. Following components are defined by the Author for such effective decision making of HR Professionals to achieve objectives of particular banks.



**Figure 5: Components of Effective decision making**

## 2. CONCLUSION

As main factor, HR is so much important for the financial sector. Because HR is providing core values to the banks in order to achieve their objectives. In this fluctuating business environment HR involvement is so much important not only HR but also as an effective decision making. But as a barrier in Sri Lankan context lots of HR practices consist of lot of manual works and finally it will waste valuable time of such HR Professionals. Once it is identified by the Author, suggested above mentioned solutions using HRIS. There are lots of possibilities of utilizing HRIS for eliminating manual works from the financial industry and use such saved time for the effective decision making in order to achieve organizations objectives effectively.

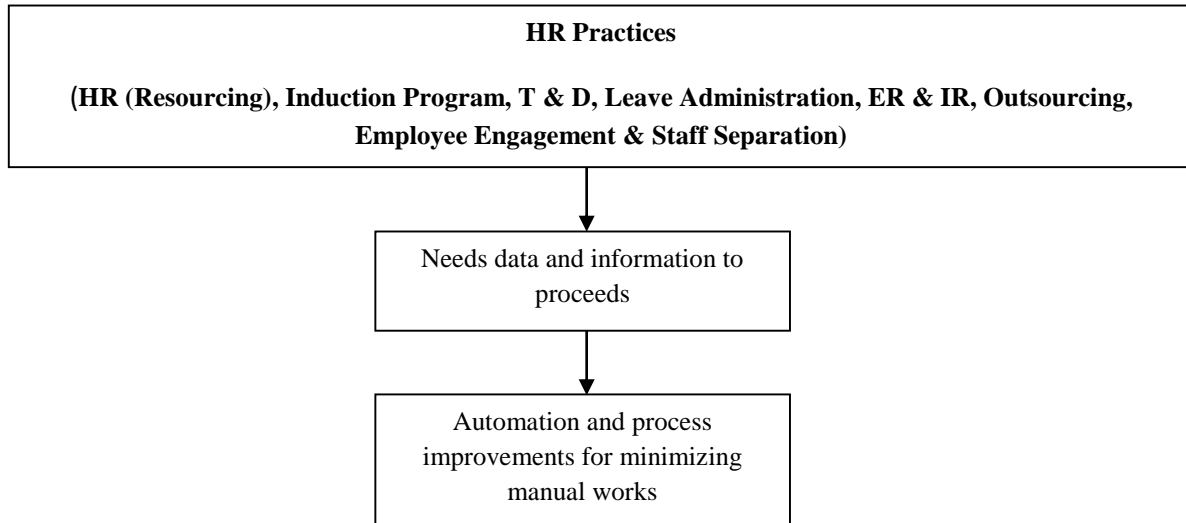
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<b>HR (Resourcing)</b>	<b>Induction and T &amp; D</b>	<b>Leave Administration</b>	<b>ER and IR</b>	<b>Outsourcing</b>	<b>Employee Engagement</b>	<b>Staff Separation</b>
hospitals for medical test, online documents submission and face to face final interview.	Use virtual white board for communicate.				regarding CSR programs and provide rewards for the best and update into separate sub system.	maintaining such data to analyze.  Use separate HRIS sub system for exist interviews.



## USING HUMAN RESOURCE INFORMATION SYSTEM (HRIS)

Dresser & Associates (2015) web elaborates that “HRIS, or Human Resource Information System, is a software solution for small to mid-sized businesses to help automate and manage their HR, payroll, management and accounting activities. A HRIS generally should provide the capability to more effectively plan, control and manage HR costs; achieve improved efficiency and quality in HR decision making; and improve employee and managerial productivity and effectiveness.”

The Author thoroughly believes that using of HRIS is kind of an effective way of minimizing discussed hundreds of manual works and which practicing by the Banks and other financial institutions which in the Sri Lankan context.

Table 02: Recommended Solutions with HRIS

<b>HR (Resourcing)</b>	<b>Induction and T &amp; D</b>	<b>Leave Administration</b>	<b>ER and IR</b>	<b>Outsourcing</b>	<b>Employee Engagement</b>	<b>Staff Separation</b>
Automation of Man power plan using HRIS allocating separate sub system.  Online Screening process, web based entrance exam real time results, skype interviews, Region wise Recruitments, assign region	Out bound inductions  Use activities for induct the employees.  Introduce e-learning portals for knowledge gathering  Virtual class room techniques for grab theories.	Use eye scanning system for identification of employee.  Use HRIS for getting data to analysis an absenteeism.  Assign separate sub system for attendance and absenteeism.	Create virtual desk for the collective agreement discussion.  Automated disciplinary management process  Create virtual desk for collective bargaining.	Virtual service provider discussion desk.  Online interviews for the selection  Assign separate sub system for an outsourced leave.  E-learning portal for learning.	Create online grievances hearing desk  After the face to face discussion  Create rewarding system and update all in HRIS for evaluating in the Promotions.  Suggestions from the employees	Use retirees for the knowledge sharing within the junior staff. So that HR needs separate sub system for the information and qualifications of retirees.  For analyzing the reasons for resigning, need separate sub system for

HR (Resourcing)	Induction and T & D	Leave Administration	ER and IR	Outsourcing	Employee Engagement	Staff Separation
<p>government owned banks.</p> <p><b>Absorption:</b> Banking Trainee/Management Trainee absorb to the permanent carder using face to face interview and lots of manually prepared documents to be filled by the trainee.</p> <p><b>Probation:</b> Conformation of probation will be done of preparing letters by manually for the individual employee.</p>			<p>maintaining face to face discussion method for this.</p>		<p>But not using advanced technology for this.</p>	<p>get the maximum out of this.</p>

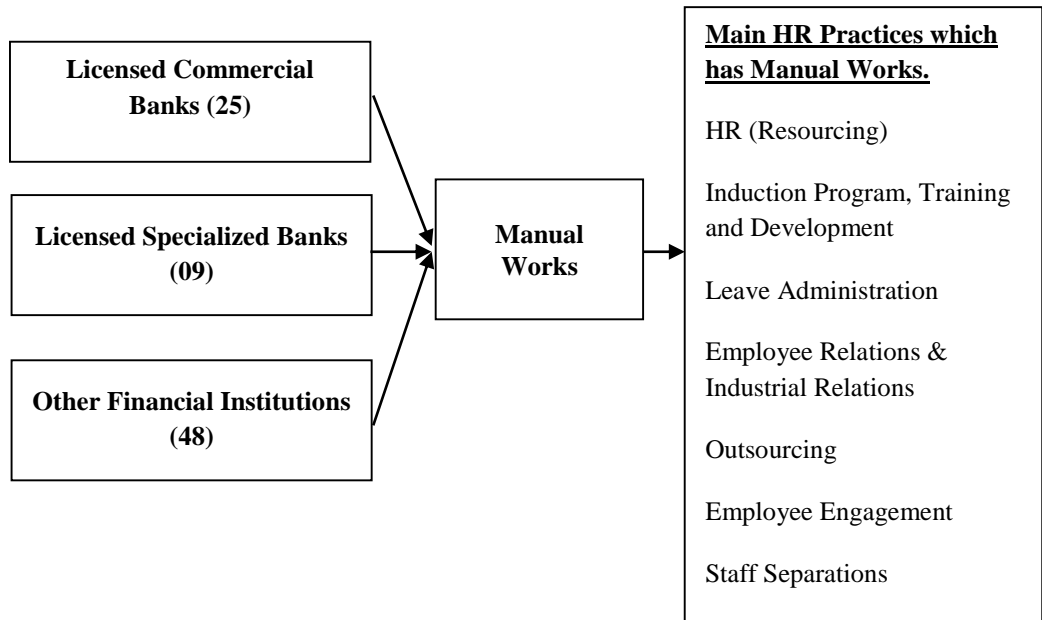
According to the table 01, the Author tries to execute HR practices which consist of hundreds of manual works which waste HR professional's valuable time. This is kind of and summary of subjected manual works and because elaboration of all should not be practical within this Research Paper.

Table 01: Manual Works

HR (Resourcing)	Induction and T & D	Leave Administration	ER and IR	Outsourcing	Employee Engagement	Staff Separation
<p><b>Man Power Plan:</b> Manual Budgeting using Microsoft Excel.</p> <p><b>Recruitment &amp; Selection:</b> Following traditional Recruitment and Selection Process</p> <p><b>Advertising:</b> Paper adds, Web adds</p> <p><b>Head Hunting:</b> Known party recommendations</p> <p><b>Job Rotation:</b> Do not work out properly.</p> <p><b>Transfer:</b> Practically failed Transfer policy. Except from</p>	<p><b>Induction:</b> Still the class room induction programs are working out.</p> <p><b>T &amp; D:</b> Still the class room Training &amp; development Programs are conducted.</p>	<p><b>Attendance:</b> Still Signed in the attendance register by the Non-executive staff and Executive attendance are monitored by the particular assigned employee of such particular Branch/Dept.</p> <p><b>Absenteeism:</b> Still do not have any mechanism for evaluating and analyzing.</p>	<p><b>Collective Agreement:</b> All the banks are practicing this and still maintaining face to face discussions.</p> <p><b>Industrial Dispute:</b> Only for the May Day, bankers Union doing some kind of parade.</p> <p><b>Disciplinary Procedure:</b> Still maintaining manual documents related procedure.</p> <p><b>Collective bargaining:</b> Still</p>	<p><b>Identifying a Service Provider:</b> Conducting Interviews and discussions.</p> <p><b>Interviewing &amp; Selection:</b> Still face to face interviews are conducting for the selection.</p> <p><b>Leave:</b> Manual Leave Admin Process using manually signed attendance sheet.</p> <p><b>T &amp; D:</b> On the job Training Provided.</p>	<p><b>Grievances handling:</b> Not using any technologically advanced procedure for this.</p> <p><b>Counseling:</b> Not using any technologically advanced procedure or the techniques for this.</p> <p><b>Employee Suggestions:</b> Using suggestions of the employees but no proper rewarding.</p> <p><b>CSR:</b> Lot of banks do this.</p>	<p><b>Retirement:</b> Not recognize this retirees as an asset for the bank.</p> <p><b>Resignation:</b> No scientific analysis for identification of particular reasons.</p> <p><b>VRS:</b> Except of government banks private banks and others financial institutions are not offering any VRS.</p> <p><b>Exit Interviews:</b> Still banks do not have any scientific way to</p>

## PROBLEM IDENTIFICATION (MANUAL WORKS)

Figure 2: Problem Identification



According to the table 01 designed by the Author for the proper identification of the problem which effect for the financial Industry which consists of Licensed Commercial Banks, Licensed Specialized Banks and other financial Institutions.

According to the table 01, the Author willing to elaborates the Main HR Practices which inherent lots of Manual Works which wasting hundreds of hours from the HR Professionals which such can used for the Strategic Decision Making in order to achieve the Banks Objectives. Further, the author views out in figure 2, the main HR practices inherent lots of manual works.

# STUDY ON THE POSSIBILITIES OF UTILIZING HRIS FOR IMPROVING OF AN EFFICIENCY OF HR DEPARTMENT IN THE BANKING CONTEXT

Hapugoda, L.

*Institute of Human Resource Advancement, University of Colombo, Sri Lanka*

## Abstract

*When going through all the activities which are practicing in the Human Resources Divisions of the all banks which are representing the Financial Sector of the Banking Industry will be basically the same in the Sri Lankan context. In the banking business HR functions and activities can be identify as a supportive function for the smooth operations of Core Banking Services. Considering about the Banks HR operations and activities, many HR Professionals are doing all hundreds of manual works for achieving its HR objectives. Therefore the Author thoroughly believes that using of effective Human Resource Information System (HRIS) will help to minimize the hundreds of manual works to save human hours. So that it will help HR Professionals to involving more Strategic HR activities including strategic decision making in order to achieving its strategic business objectives. Further effective use of HRIS will definitely help to eliminate such manual works from the Banking Industry as well. Case study approach and critically reviewing of Literature and observations used as Methodology of this study and all Conclusion and Recommendation are based on the discussion.*

**Keywords:** HR Professionals, HRIS, Core Banking Services, Strategic Decision Making, HR Activities, Maximize the Profits

## 1. INTRODUCTION

World Bank (2015) web views out that the Sri Lankan economy is “now strives to transition to an upper middle – income country”. In that sense it is kind of and plus point for the Sri Lankan economy since Sri Lanka was at lower level of income generated country. When considering the Sri Lankan economy, the Author realized that there are three main categories come under structure of Sri Lankan economy. Agricultural sector, Industrial Sector and Service Sector are such categories and such categories are indicated sectorial composition based on Gross Domestic Production in 2014 as; Agricultural Sector 10.1%, Industrial Sector 32.2% and Service Sector 57.6%. Further the Author elaborates the Service Sector which is the largest Sector in Sri Lanka, consist of seven sectors which are Wholesale & Retail Trade, Transportation & Communication & Banks, Insurance and Properties Sectors are the three leading Sectors come under Service Sector. The Authors Researching area is basically based on the Banks, Insurance and Properties Sector which is the third highest largest sector in the Service Sector. According to the Annual report (2014) in Sri Lankan the Author can identify 25 Licensed Commercial Banks, 9 Licensed Specialized Banks and 48 Other Financial Institutions which comes under Banks, Insurance and Properties Sector.



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value at .565. For testing whether employee's Job Involvement significantly intervene the relationship between QWL and Affective Commitment is by comparing the difference between the beta ( $\beta$ ). The difference between .424, .565 and .614 is 0.190 which indicated the effect and the significant value is at .000 which is low than 0.05. Therefore the hypothesis 4 which states the employee's, job involvement significantly intervene the relationship between QWL and Affective Commitment is supported.

## 7 CONCLUSION

Quality of Work Life does have a significant relationship to Affective Commitment. From the analysis, if the employees are relatively satisfied with the quality of work life provided by the organization, the stronger the commitment will be to the organization. Affective Commitment is highly related to "I want to be" with the organization. The positivity and willingness is important towards achieving an organization's mission, vision and objective. Employees who display a high degree of Affective Commitment are deemed to be loyal and satisfied with the organization's management and tasks assigned.

The research also contributed to a new perspective of Quality of Work Life in the Sri Lankan context. Previous studies commonly focused on the outcomes or the importance of Quality of Work Life. However in this paper, the framework is new which addressed the employee's satisfaction of Quality of Work Life in relation to Job Involvement and Affective Commitment among the employees. Hence, the findings have sought to demonstrate the importance of dimension of QWL from a new perspective.

The following contributions are the improvements that can be made by the respective organizations which were studied or the sector per se in designing an effective Quality of Work Life. Although the variables are grouped into five dimensions, the organization as a whole may adapt and improvise the current work system within the organization to enhance employee job involvement and affective commitment. Especially among the private sector which is usually perceived as the provider of better human touch services. It is not an easy task for management and the organization to design and adapt Quality of Work Life effectively without the support and dedication from the employees themselves. However, both management and the organization can plan and design the best fit approach for the benefit of all. It is not just the monetary based benefits that human capital seeks today; there are other aspects that motivate and enhance their job involvement and affective commitment such as opportunities at work.

In conclusion, the research findings presented have demonstrated that satisfactory qualities of work life enhance job involvement which relates to affective commitment. Therefore, organizations should strive to provide good Quality of Work Life to obtain the best results from their employees.

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**Table 1.5: Regression between QWL and JI**

<b>Method</b>	<b>(H1)</b>
Regression	0.565
R <sup>2</sup>	0.483
Adjusted R <sup>2</sup>	0.472
<b>Beta</b>	<b>0.565</b>

**H2: The higher the satisfaction with QWL, the higher the Affective Commitment.**

The analysis presented in Table 2 indicates that 52.4 percent of the variance of Total Quality of Work Life (TQWL) explained the significant influence on Affective Commitment which was significant at 1% (sig. = 0.000). Therefore, according to the results of both tests, the null hypothesis was rejected and the alternative hypothesis was accepted since  $r > 0$ .

**Table 1.6: Regression between QWL and AC**

<b>Method</b>	<b>(H2)</b>
Regression	0.424
R <sup>2</sup>	0.385
Adjusted R <sup>2</sup>	0.345
<b>Beta</b>	<b>0.424</b>

**H3: There is a positive relationship between Employee's Job Involvement and Affective Commitment.**

The analysis presented in Table 2 indicates that 61.4 percent of the variance of Job Involvement explained the significant influence on Affective Commitment which was significant at 1% (sig. = 0.000). Therefore, according to the results of both tests, the null hypothesis was rejected and the alternative hypothesis was accepted since  $r > 0$ .

**Table 1.7: Regression between JI and AC**

<b>Method</b>	<b>(H3)</b>
Regression	0.614
R <sup>2</sup>	0.562
Adjusted R <sup>2</sup>	0.532
<b>Beta</b>	<b>0.614</b>

**H4: The Employee's Job Involvement is significantly intervened the relationship between QWL and Affective Commitment.**

Table 7 noted that Employee's Job Involvement does intervene the relationship between Quality of Work Life (QWL) and Affective Commitment (AC). The Beta value of QWL's relationship with Affective Commitment is 0.424 and QWL's relationship with JI has a Beta

1. Whether there is any relationship between Quality of Work life, Job involvement and Affective Commitment.
2. What the strength (magnitude) of the relationship between those variables is?

The following statistical techniques were selected to do the above inferential statistics:

1. The Correlation analysis
2. The Regression analysis

## 6. RESULTS AND DISCUSSION

### 6.1 Reliability Analysis

The reliability of the instrument was measured using Cronbach's alpha analysis. It measures the internal consistency of the instrument, based on the average inter-item correlation. The result of Cronbach's alpha test is given in Table 3.

**Table 1.3: Reliability Analysis**

Variables	Cronbach's Alpha value
Quality of Work Life	0.733
Job Involvement	0.918
Affective Commitment	0.8314

### 6.2 Demographic Factors

The collected data shows there are 72% are males and the rest are females. And also it depicts most of the respondents' lies between 25 – 40, and less numbers are lies between 41 – 60. Sample data shows, that the educational level of the 51% of employees completed their A/L, rest are completed their higher education (Post graduate, Master Degree etc.).

### 6.3 Research Information

#### 6.3.1 Extent of Variables

**Table 1.4: Extent of Quality of Work Life / Job Involvement / Affective Commitment**

Variable	Mean	Decision Attribute
Quality of Work Life	3.21	MODERATE
Job Involvement	3.49	MODERATE
Affective Commitment	3.42	MODERATE

As per the above table all the variables are in moderate level in the private banks.

#### 6.3.2 Testing Hypothesis

**H1: The higher the satisfaction with QWL, the higher the Employee's Job Involvement.**

The analysis presented in Table 2 indicates that 42.4 percent of the variance of Total Quality of Work Life (TQWL) explained the significant influence on Job Involvement which was significant at 1% (sig. = 0.000). Therefore, according to the results of both tests, the null hypothesis was rejected and the alternative hypothesis was accepted since  $r > 0$ .

**Table 1: Sampling Frameworks**

No	Private banks	Population	No. of questionnaire issued
1.	Commercial Bank	19	18
2.	Seylan Bank	59	54
3.	Hatton National Bank	32	30
4.	Sampath Bank	25	23
6.	Union Bank	20	19
7.	Pan Asia Bank	16	15
8.	Nations Development Bank	25	23
9.	Nations trust	19	18
	Total	215	200

(Source: Annual Reports of Private Banks)

## 5.2 Data collection methods

### 5.2.1 Primary data collection

The researchers used the questionnaire to collect the primary data. Questionnaires were circulated to all 200 of the Private Bank's staff in Batticaloa District. A total of 189 responses was received, for a response rate of 94.5%. All responses were anonymous.

### 5.3 Data analysis and evaluation

Descriptive and inferential statistics were adapted to data analysis and evaluation. Under the descriptive analysis, mean, and standard deviation were adopted, and under inferential statistics, correlation, and regression were adopted.

#### 5.3.1 Univariate analysis

Univariate analysis consists of mean, median, mode, and standard deviation. Based on the Univariate analysis the establishments of each variable in the conceptual framework have been derived three types of attribute can be derived from the variable indicated in the questionnaires between the scales of 1 – 5 as follows.

**Table 2: Decision range**

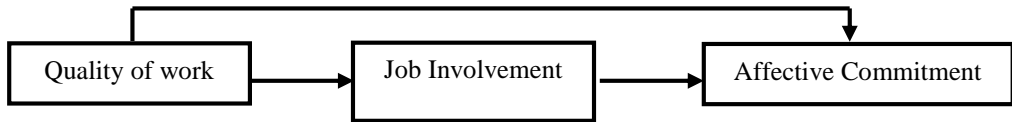
Range	Decision Attribute
$1 \leq x_i \leq 2.5$	Lower level of factors
$2.5 < x_i \leq 3.5$	Moderate level of factors
$3.5 < x_i \leq 5$	Higher level of factors

#### 5.3.2 Inferential Statistics

In this research model there are three variables, namely Quality of Work life, Job involvement and Affective Commitment. Hence, in this research, the inferential statistical analysis was made to determine:

- g) To identify whether Job involvement intervene the relationship between Quality of Work Life and Affective Commitment

## 4. THEORETICAL FRAMEWORK



### 4.1 Operational Definitions

**Quality of Work Life (QWL):** QWL is viewed as perceived working conditions in an organization. An average human capital spends a minimum of eight hours of daily time at work undertaking diligent performance of tasks. Carlson (1980) has viewed QWL as: (a) a movement; (b) a set of organizational interventions and (c) a type of working life experienced by employees.

**Job Involvement:** Employees whom are involved are more psychologically present, more attentive and display greater connection to their work. Through this involved employee, it is easy for an organization to access the inaccessible part of them (Kahn & Kram, 1994). Therefore, an employee who is highly motivated towards the job renders better involvement to the organization than those who are not (Kanungo, 1982).

**Affective Commitment:** According to Allen and Meyer (1997), there are three components of organizational commitment: (a) affective commitment (AC), which relates to an employee's emotional attachment to, identification with, and involvement in the organization; (b) continuance commitment (CC), which relates to the cost the employee associates with leaving the organization; (c) normative commitment (NC), which relates to the employee's feelings of obligation to remain with the organization.

### 4.2 Research Hypothesis

H1: The higher the satisfaction with QWL, the higher the Employee's Job Involvement.

H2: The higher the satisfaction with QWL, the higher the Affective Commitment.

H3: There is a positive relationship between Employee's Job Involvement and Affective Commitment.

H4: The Employee's Job Involvement is significantly intervened the relationship between QWL and Affective Commitment.

## 5. METHODOLOGY

### 5.1 Sample criteria and sample size

In this study, selected sample represents the whole population. Accuracy of the estimates largely depends on the way the sample was selected. The sample was selected randomly. This research covers the employees in the private banks. This population includes Branch Managers, Assistant Managers, Computer Operators, Officers, Cashier and Clerk. In this study, 200 employees in the private banks have been taken into consideration and their responses were obtained through questionnaire.



2003).QWL techniques can satisfy the psychological needs of the staff in an organization (Pluck, 1993: 36-42).

Human beings are highly associated with emotion and intelligence. Therefore, the requirement to fulfill human need hierarchy is a rather important aspect especially on satisfaction and motivation. Ironically, by providing QWL, organizations are keen on tapping employees' job involvement. Job involvement by an employee is seen as an indicator of high performance and an organization's return on investment. Developing and providing excellent QWL has a financial impact on an organization as well. Upon providing QWL, the expected output is employee's job involvement which focuses on a task or job and the following expectation will be Organizational Commitment (OC). Organizational commitment indicates the intensity of an employee's involvement and how strongly they relate to the organization (Hellrigel, Slocum Woodman, 1998). Job involvement is defined as the degree to which a person psychologically identifies with. Job involvement is related with the work motivation that a person has with a job (Bashaw & Grant, 1994; Hackett et al., 2001). Organizations with high OC are perceived to have lower turnover rates and absenteeism.

Organizational commitment (OC) has been a vital area of study among researchers for past decades. Various outcomes of research have been produced with various interpretations of organizational commitment. In addition, most research was also able to assist organizations determine the employee's level of performance, and tenure with the organization (Malloy, 1996). Thus, the focus of this study is to examine "The importance of Quality of Work Life (QWL) and the conviction of Quality of Work Life's on employees' Job Involvement and Affective Commitment. The study is conducted based on 5 dimensions of QWL pertaining to Job Involvement and Affective Commitment which will be moderated by age and the working experience of the employee". This research will act as a platform for organizations to recognize the extent of their employees' job involvement and affective commitment through the practices of quality of work life".

### **3.1 Research Questions**

- a) What extent Quality of Work life in Private Banks?
- b) What extent Job Involvement in Private Banks?
- c) What extent Affective Commitment in Private Banks?
- d) What is the relationship between Quality of Work Life and Job Involvement?
- e) What is the relationship between Job Involvement and Affective Commitment?
- f) What is the relationship between Quality of Work Life and Affective Commitment?
- g) Is Job involvement intervene the relationship between Quality of Work Life and Affective Commitment

### **3.2 Objectives of the research project**

The research study has following objectives:

- a) To identify the extent of Quality of Work life in Private Banks.
- b) To identify the extent of Job Involvement in Private Banks.
- c) To identify the extent of Affective Commitment in Private Banks.
- d) To identify the relationship between Quality of Work Life and Job Involvement.
- e) To identify the relationship between Job Involvement and Affective Commitment.
- f) To identify the relationship between Quality of Work Life and Affective Commitment.

public organizational studies indicate the existence of affective and continuance commitment (Kalbers & Fogarty, 1995; Ketchand & Strawser, 2001). Most of the research on antecedent OC were oriented to job characteristic and work experience on various variables like work design, job challenge, autonomy, skills and feedback on task (Bamber and Iyer 2002; Dunham,Grude and Castaneda,1994), and decision making participation and support from management (Zaffane,1994). Konstans (1988) concluded that the commitment of employees was influenced by the organization's ability to meet employee expectations. Apart from that organizational tenure is also always positively associated with organizational commitment, this is because of the general assumption that the more years employees are with a company the more benefits they get (Pare, Temblay & Lalonde, 2001). It is very important to have committed employees for the existence of both the private and public sectors; it is both a basic activity and final aim governing survival of an organization to survive. This is because individuals who are organizationally committed are more adaptable, productive, work with a sense of responsibility and are not financial liabilities to the organization (Demir, 2012) Committed employees will remain in the organization compared to non-committed employees (Meyer et al., 2002). But an absence of alternatives can lead to weaker affective and normative commitment into a strong continuance commitment (Ceylan & Bayram, 2006) and the common point in organizational commitment is that employees continue to remain in the organization whether they feel positive or negative (Ozdevecioglu, 2003).

The present study defines QWL as providing a good compensation package, favourable conditions and environment, fair capacities of authority, rewarding potential growth and a supportive organizational climate. An excellent work environment is seen as nurturing to an employee's affective commitment. In order to improve the job satisfaction and commitment of employees determining the QWL is an important consideration for employers (Normala, 2010). There is a substantive list of studies pertaining to QWL, which asserts that QWL has a positive and significant relationship to organizational commitment (Ashoob, 2006); is positively and significantly correlated to a manager's profile (Ali Nataji, 2006); and is significantly related to performance of staff (Fallah, 2006).

Recent research included the perspective of employees and the fulfilment of their needs and with that, Sirgy et al. (2001) and Lee, Singhapakdi and Sirgy (2007) describe QWL as "a construct which deals with the wellbeing of employees" and defines it as "employee satisfaction with a variety of needs through resources, activities, and outcomes stemming from participation in the workplace". Employees who perceive their QWL positively and are satisfied with their work and organization have higher wellbeing because an individual's QWL influences individual and is also a major predictor of psychological, health wellbeing and also for life satisfaction (Martel & Dupuis, 2006; Sirgy et al., 2001; Srivastava, 2008; Wilson et al., 2004).

Anecdotal evidence suggests that an increasingly important step towards attracting and retaining quality employees is to improve the quality of the organization's work life. There are six critical factors to be considered in retaining employees which are compensation, job characteristics, training and development opportunities, supervisor support, career opportunities and work/life policies (McNee et al., 1998; Dockel, 2003).

### **3. PROBLEM STATEMENT**

QWL is multi-dimensional; it indicates the overall satisfaction in an individual's work life which leads to a balanced work-life. It gives a sense of belonging to the organization, a sense of being their-self and includes a sense of being worthy and respectable (Morin et al.,

(Herrick, 1981, according to Allame, 1999). Quality of work life tries to satisfy the needs of jobs which have become increasingly alienated. Quality of work life is responsible for the organizational development towards low levels of organization hierarchy (Harvey and Brown, 1998, p. 62).

Considering the above-mentioned outlook and knowing the importance of manpower in continuation of organizational development, analyzing the manpower status of an economical unit called bank from different aspects is of considerable importance, because this can determine its activities and continuity in future. It is obvious that continuous improvement of performance and processes is achieved through manpower, and its main effect is more persistence in competitive market.

## 2. LITERATURE REVIEW

*Job involvement* is a descriptive belief of the present job and tends to be a function of how much the job can satisfy one's present needs (Kanungo, 1982). The concept of job involvement was first introduced by Lodahl and Kejiner in 1965. It has a direct correlation with job satisfaction and also influences the work performance, sense of achievement and unexplained absenteeism (Robinowitz and hall, 1977). Job involvement has been linked to job related behaviour as well as being a subsequent predictor of job related outcomes such as "intentions to leave an organization, professional commitment and ethical behaviour, psychological ownership for ownership and performance, lower role of conflict and role ambiguity and an employee's readiness to change" (Freund, 2005; Clinebell and Shadwick, 2005; Van Dyne and Pierce, 2004; Leong et al., 2003).

Employees do not get involved in the job because they let their emotions play a role. Being highly involved in the job is often a response to emotional rather than rational needs. Fine's (1998) quotes of a cook discussing the centrality of being emotionally involved in the job: I just love the activity...I concentrate totally, so I do not know how I feel...it is like another sense takes over. People are social creatures where, through job involvement they experience emotional attachment. A managerial job is often complex and challenging and most of the times they are extremely involved in task performed, where they remain beyond the required working hours.

There are many organizational behaviour studies which have examined an individual's psychological attachment to their work organizations. Most studies use *organizational commitment* (OC) to examine the relationship of employees to their firms. The bond or link that an employee has with his/her organization is called organizational commitment (Lambert and Paoline, 2008; Mathieu et al., 1990). QWL and OC are multidimensional and is an outcome of one's evaluation of his/her work place (Normala, 2010). Most researches has shown a positive relationship between organizational commitment and job satisfaction (Garland et al., 2009; Lambert and Hogan, 2009; Markovits et al., 2007) and organizational commitment acts as a variable and provides useful information regarding planning, organizing, increasing, performance and reducing absences for managers. Employees who are committed to an organization will see themselves a part of the organization and remain loyal to it (Asgari et al., 2011). Managers can keep their employees committed to the organization by having employees participate in decision-making and by providing an adequate level of job security (Moorhead, Translated by Alvani and Memarzadeh, 1995: 75).

Most research focuses mainly on antecedents and consequences. Allen and Meyer (1990) have identified three types of OC which are: affective, continuance, and normative. Most

# QUALITY OF WORK LIFE ON EMPLOYEES JOB INVOLVEMENT AND AFFECTIVE COMMITMENT

Victor, L.D.

*Department of Management, Faculty of Commerce and Management, Eastern University, Sri Lanka*

## ABSTRACT

*Human beings are highly associated with emotion and intelligence. Therefore, the requirement to fulfill human need hierarchy is a rather important aspect especially on satisfaction and motivation. Ironically, by providing QWL, organizations are keen on tapping employees' job involvement and commitment. This research studies the Quality of Work Life on Employees Job Involvement and Affective Commitment of private bank employees in the Batticaloa District. The data for this study was collected from 200 employees selected from private banks in Batticaloa District. Three variables are considered to this study, namely, Quality of Work Life on Employees Job Involvement and Affective Commitment.*

*The researcher used the questionnaire to collect the primary data. Descriptive and inferential statistics were used to analyses the data, Mean and standard deviation was used in the descriptive statistics to find out the influence of each factor in the dependent variable. And the correlation and regression was done to find out the relationship between independent and dependent variable. The researchers used SPSS 19.0 to analyze the data.*

*In general, researcher found that all the factors are in moderate level. And the Quality of Work Life, Job Involvement and Affective Commitment have the significant impact between each other. The research findings presented have demonstrated that satisfactory Qualities of Work Life enhance Job Involvement which relates to Affective Commitment. Therefore, organizations should strive to provide good Quality of Work Life to obtain the best results from their employees.*

**Keywords:** Quality of Work Life on Employees Job Involvement, Affective Commitment and public sector employees

## 1. INTRODUCTION

In today's world of business, it is unavoidable for organizations to be free from various forms of competition. This scenario has been an impetus for many organizational researchers to study specific employee intentions in joining an organization (Ali, 1996). As the staff of every organization is one of the most important capitals, and paying attention to their needs can help to increase efficiency, lack of attention can lead to loss of many resources. Therefore, if an organization wants to achieve its goals, it should be attentive to its workforce. Because of this, the organizations are highly concerned with the employee's involvement and commitment to the organization in order to ensure the organization is operating and managing effectively. To address this issue, quality of work life (QWL) needs to be a focal discussion point.

One of the realistic basics of the concept of quality of work life is that jobs without content, i.e. jobs which have become too much professional, reduce the efficiency of the staff

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wellbeing has been taken as a mediating variable and it has been established that psychological capital influence job performance via psychological wellbeing (Polatc and Akodogan, 2014). An analysis of human resources and psychological capital of Chinese workers revealed that it has a positive impact on job performance (Luthans et al., 2005). Thus the following proposition is formed. Having said that, it could arrive to third proposition as:

**Proposition: 3** Psychological wellbeing mediates the relationship between psychological capital and job performance of customer service representatives

## 5. CONCLUSION

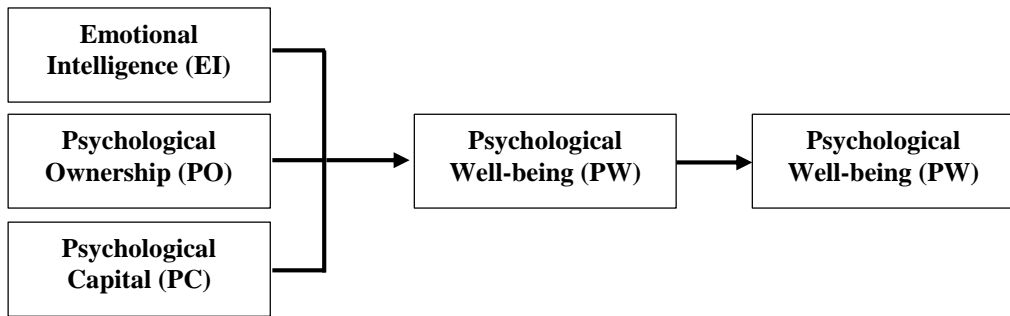
In view of above foregoing arguments this study offers a new perspective by evaluating a range of psychological intervention techniques in heterogeneous groups of service employees and also by looking into the niche of psychological wellbeing of frontline call center employees from the psychological capital perspective. The insights gained will help to develop selection strategies, work redesign programs and training that would benefit the organization by reducing employee's costs and employee's wellbeing. Further, proposed propositions may be hypothesized in future studies, special referring to service sector organizations which involve with service delivering staff including call center crews. Banking, Insurance, telecommunication and hospitality sectors are noticed as emerging service sectors in most of developing countries. Therefore, the niche of this paper could be tested aligning to the trends of different service sectors as to contribute for the practice and respective knowledge gaps may exist. The proposed conceptual framework and respective propositions could be further studied with service marketing and internal branding related concepts including Service Quality, Brand Citizenship Behavior and Employer Branding to address the research gaps.

On managerial level this study will offer the ability to assess and initiate things independently for the advancement of the evolution of the characterization of groups among frontline employees. It will be very helpful for employees to elevate the morale of employees to perform better as part of group.

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**Figure 1: Conceptual Framework**



The proposed conceptual framework demonstrates the variable relationship on how three independent variables namely Emotional Intelligence (EI) Psychological Ownership (PO) and Psychological Capital (PC) figured out under the Psychological Characteristics impact on Job Performance (JP) whereas Psychological Wellbeing mediates the said impact.

#### **4. PROPOSITIONS FOR THE FUTURE STUDIES**

According to Farah et al., (2012) employees who possess higher emotional intelligence and emotional perception ability their team performance and eventually their job performance will be high. According to Carmeli et al., (2007) there is a positive association between emotional intelligence and psychological wellbeing and accordingly (Lam and Kirby, 2002) it increases performance and productivity. Service workers with higher level emotional intelligence are able to handle emotional pressures regardless of the quality exchanges with their supervisors and hence it has been indicated that psychological wellbeing mediates the relationship between emotional intelligence and job performance of customer service employees. Accordingly, study proposes the first propositions as:

**Proposition: 1** Psychological wellbeing mediates the relationship between emotional intelligence and job performance of customer service representatives.

Parker et al., (1998) conceptualized psychological ownership in terms of feelings responsible for a particular target. Furthermore Parker et al., (1997) gave a robust insight from a conceptual and operational perspective that psychological sense of ownership is strongly inculcated only when employees are concerned about their target. So, in such scenario it is established that high level of production ownership takes place when the employees are concerned about the product quality, customer satisfaction and determined to be part of team (Pierce et al., 2001). However, the possession is the key factor that distinct the concept of psychological ownership from other variables such as organizational environment and job satisfaction (Pierec et al., 2010). On the basis of theoretical foundation the following proposition is derived that to what extend the psychological wellbeing mediates the relationship psychological ownership and to maintain the quantity and quality of calls. Par with the said, it does propose the second proposition as:

**Proposition: 2** Psychological wellbeing mediates the relationship between psychological ownership and job performance of customer service representatives.

Psychological capital plays an important role in providing employees to have high performance. But there are researchers that have been conducted in which psychological

ownership also takes into consideration the relationship that prevails between an individual and the object. This indicates that the object has the strong association with the self. Thirdly, affective and cognitive experiences are central psychological ownership will be as compare to the individual who have less control over the globe. Psychological capital is a model comprised of hope, resilience, self –efficacy and optimism. The personality traits mentioned in the psychological capital helps the individual to devise new coping strategies to acquire the desired goals. Thus indicating that one should have confidence to devise coping strategy with the changing circumstances as well as the resilience to tolerate the setbacks that are bound to happen. Under such circumstances employees need to be encouraged to move on and start devising alternate strategies to tackle the situation and all this can happen is the trait how exists within their personalities. In accordance with this when the employees come across barriers or complications optimism helps them to have a positive outlook towards goals. In context of call center customer service representatives working they undergo changes in terms of dealing with customers sometime they have to deal with verbally abusive customers and subsequently they have to manage their cost and KPIs.

Within the organizational psychology the phenomena of loss holds great significance. As mentioned above regarding call center employees working environment and the stressful nature, it is proven that employees undergo psychological struggles in order to acquire psychological resources. Conservation resource theory helps in understanding the resources in terms of their role in attaining goals which helps in offering more clarity to the construct. This study also addresses the gap with reference to conservation resource theory that how individuals determine the values of their resources addressing it from psychological perspective.

Previous empirical researchers and for the work related theories the regular focal point have always been the negative impact of the work on wellbeing and the negative impact of stress on health. For example a study on call center was conducted in order to find out the mediating effects of the cognitive emotional strategies on the job stress of call center employees and it was found out that employees suffered with higher level of job stress, physical symptoms, depression and anger (Jin, Juong and Do, 2014). In addition to this there was another interesting study conducted which revealed that there are three factors that are associated with the stressful nature of call center which are role ambiguity, promotion practices and associated with the stressful nature of call center which are role ambiguity, promotion practices and pay level they have adverse impact on role performance (Sial, Imran and Zaheer, 2011).

Furthermore it was also identified by the researchers (Sawyer, Srinivas and Wang, 2009) that the relationship between personality factors (conscientiousness, agreeableness, emotional stability, extraversion and openness to new experience) and service performance found that all of the personality dimensions except extraversion and introversion significant. However, customer service representatives have no control over their internal states and behavior, even though on their own environment and desired outcomes. This is all due to the telephonic monitoring which takes away the control from them (Visser, 2008). Accordingly, the said constructive discussion on those key concepts and respective variables postulates a conceptual framework to be hypothesized in future studies as stated in the Figure 1.

individual who possess resilient qualities their personalities are more inclined towards a firm acceptance of reality secondly they have more meaningful approach towards life indicating that their belief is underpin by strongly held values thirdly an impressive ability to comply with noteworthy change in lives. As per Luthan and Yousef (2004) resilience prevailing within the individual teaches them how to cope with the risky and setback situations. Resilience has been studied in the field of sports (Sarkar and Fletcher, 2013) because athletes needs to constantly withstand pressures of different nature to achieve and sustain their high performances. Besides resilience has been studied among leaders (Rammirez and Hammock, 2014) among students distress (Klibert, 2014) as well as from clinical perspective (Siang, 2013) suggesting that resilient people can thrive and grow through setbacks and difficulties (Luthans and Youseff, 2004).

### **3. CONCEPTUALIZING THE VARIABLE RELATIONSHIPS**

The theory that laid the basis in understanding the correlation among variables within the framework is conservation resource theory. The nature of call center work is very stressful. The basic principal of conservation resource theory is that human beings strive to protect their current resources (conservation) and acquire new resources (acquisition). The meaning of resources is that objects, states, conditions and things that people value. The values of the resources depends on the individual and is associated with their personal experiences and situations. The belief of conservation resource theory revolves around two concept primacy of resource loss and the second one is resource investment. The law of primacy law shed light on the fact that psychologically it is damaging that if employees loses their resources rather gaining resources (Xanthopoulou et al., 2007). The main aim of the study is to address the question that what role personal resources play in relation to challenging and handling difficult customers and job performance. The meaning of personal resources is the resiliency that help an individual in taking control over the environment. The personal resources that are included in the framework are emotional intelligence, psychological ownership and psychological capital. Salovey and Mayer (1990) defined emotional intelligence as “the subset of social into intelligence that involves the ability to monitor one’s own and other’s feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions”. According to Dearborn (2002) emotional intelligence is not an innate ability it is a learned ability. In context to call center the service work should demonstrate patience and empathy (Huang et al., 2010).

According to Etzioni psychological ownership is ‘dual creation, part attitude, part in the mind and part real.’ Employees in whom the sense of psychological ownership is strong they are highly determined to achieve their targets. The core of psychological ownership is the feeling of possessiveness and of being psychologically tied to an object. Therefore the target becomes part of the psychological owner’s identity (Pierce, Kostova and Dirks, 2014). According to psychological ownership theory the target must be clear and should be of great interest and attention for the individual. But the target should have certain characteristics so that the motives for efficacy and effectance address the self-identity motives. But those targets that are capable of addressing multiple motives and/or fulfilling the motives to a greater degree have the potential for a deeper level of ownership. The targets can satisfy the motives and provide the necessary and sufficient conditions for psychological ownership (Pierce, Kostova and Dirks, 2001). Pierce et al. (2001) identified three features regarding psychological ownership Firstly a) a sense of ownership that exhibit itself in the form of emotion and meaning which are related with “my”, “mine” and “our”. Secondly sense of

strong internal locus of control will be more hopeful regarding the success in achieving the targets (Szilagyi, Sims and Keller, 1976; Byrne, 2011 and Singh and Dubey, 2011). For example it was established that employees with high internal locus of control have less job stress and higher job performance as well as satisfaction (Chen and Silverthorne, 2008). As per Anderson and Schiener (1978) it was also established that those team members in which internal locus of control is strongly manifested they have higher chances of emerging as leaders of their groups. This finding is posited with call center work setting as team leaders are selected on the basis of their performance so if they have higher internal locus of control and they work in a group their performance is exceptional. Byrnes (2011) is also of the view that is the locus of control is more relevant in a just in time situation, where there are high expectations from the employees to solve the problems on their own.

In following to this the third construct of psychological capital is efficacy. It was derived from the Bandura's social cognitive theory 1997, applied to the workplace, efficacy can be defined as "the employee's conviction or confidence about his or her abilities to mobilize the motivation, cognitive resources or courses of action needed to be successfully execute a specific task within a given context" (Stajkovic and Luthen, 1998 p.66 cited in Avey et al., 2009). In context to the association with hope the efficacy can be taken as an action of explaining of a firmly held belief in one's proficiency in a particular area for example firstly it can be taken is to produce numerous pathways secondly to work towards the goal with great zeal and eventually be successful enough in accomplishing that goal. Bandura's social cognitive theory basically (1986) focuses on the self –efficacy which is taken as "one of the most theoretically, heuristically and practically' useful concepts which are formulated in modern psychology".

Bandura (1977, 1997) came up with two mechanisms "discrepancy mechanism" and discrepancy reduction". In the light of these two different mechanisms there is an exchange of diverging views that people who have high self-efficacy , set challenging goals for themselves. Sometime the goals are too high that it is difficult for the person to achieve which leads towards the lack of compatibility between the current state of performance and the desired state of performance (termed as "discrepancy production"). At the individual level these are some of the dynamic process which with the passage of time the person undergoes and they should be observed and analyzed (Yeo and Neal, 2013). Bandura (1997) has conceptually manifested the chief importance of the efficacy from where it originates is in the success of the attainment goals. It is this process that makes employees believe that they can accomplish the task and they can do it again.

In accordance with this Bandura (1997) also stated that other dimensions that can contribute towards in accomplishing the task is "observation" that an employee observe his or another colleague in successfully achieving the target (Vicarious Learning). In addition the employees also learn from modelling when they are reinforced by their leaders (social persuasion) that they will be successful in their assigned targets and along this being emotionally and physically motivated will also contribute towards demonstrating desirable performance and even to devise coping strategy to accomplish the task (arousal).

The fourth component of psychological capital is resiliency which means the maximum capability of an employee or an individual to spring back from unpredictable, tribulation, defeat or even positive but apparently prodigious changes such as increased responsibility (Luthans, Avolio, Walumbwa and Li, 2005). According to Avey , Patera and West (2006)

factor of positivity in general and POB (positive organizational behavior) criteria meeting states in particular states that go beyond human and social capital to gain competitive advantage through investment/development of “who are you “ (Luthans, Luthans and Luthans, 2005; Luthans and Youseff, 2004). According to Luthans et al., 2005 there are four fundamentals of psychological capital. Firstly, it is based on positive psychology paradigm which includes the importance of positive organizational behavior which is comprised of unique theory/research, valid measurement and state like. Thirdly, the psychological capital is not only about human capital and social capital it also involves investment and development such as economic, financial and capital so that the performance can be enhanced and consequently competitive advantage.

In psychological capital hope is the first of four variables. According to James et al., 2009 hope is that cognitive process which lays the basis of those grounds which helps in accomplishing the goals. The trait hope is basically a motivational state in which it is based on the reciprocal action between three factors: “goals, agency and pathways” (Luthans and Youseff, 2005). Employees are mostly motivated towards their targets by their sense of agency because it unconsciously assimilate resolution and determination in employees so that they can channelize their energy towards their goals (Luthans and Youseff, 2005). This indicates that the employees who have high hopes they know how to make their way out if there is an obstacle in acquiring their targets, they have the ability to find alternative paths. However, the variable hope has been very well investigated in the field of education (Veck, 2014; Arceneaux, 2013), sports (Kretchmar, 2012 and Oh, 2013) and medical (Olsman et al., 2014; Rozensky, Tovian and Sweet, 2014; Tutton, Seers, Langstaff and Westwood, 2012) but with the passage of time the association between hope, work and performance is unfolding as it is relatively a new field. But in the field of business it has been indicated the relationship between the hope and performance has a positive impact on financial performance of business unit, job satisfaction and retention for example in across cultural study of Chinese workers hope was related to their performance (Luthans, Avolio, Walumba and Li, 2005) which ultimately contributed towards the sustainable competitive advantage.

The term optimism is dissimilar from the people who work so hard in order to produce intended results. They work with the belief that the only way to pave change is by relying of their personal strength and abilities. In contrast to this optimistic people do not tend depend on their personal abilities they are of the view that everything will turn out positive eventually (Pierce, Kostova and Dirks, 2001). One of the qualities of people with optimistic attitude is that they make everything internal, stable and global “attributions for success” and externally, unstable and “specific attributions for failures”. Thus if anything negative come their way they are still motivated towards the goals because of their optimistic trait which is so deeply inculcated within their personalities (external) infact they are of the view that circumstances were distinctive (specific) and still being hopeful for the second attempt and moving forward with the belief that they will not lack success again. Therefore irrespective of setbacks and problems the optimistic employees keep moving forward with a positive attitude (Avey et al., 2010).

However, there is a distinct line between hopeful and optimism. The difference between hopeful and optimism can be explained in the light of locus of control when employees possess high external locus of control it indicates the fact that the employee might be hopeful but not optimistic about the situation or targets. But at the same time it can be other way around that if the person is not very hopeful about situation. Contrary to this the person with



emotional intelligence is a challenging and a key variable that plays a crucial role in sustaining the high performance and high competitive advantage (Shahhosseini, Silong, Ismail and Uli, 2012).

## **2.2 The impact of psychological ownership on psychological wellbeing and job performance of employees**

The phenomena of psychological ownership are almost prevalent in all societies. When people are aware of their ownership they undergo a strong sense of association between their tangible and intangible targets (Ditter, 1992). The concept of “target” has a broad sense and is linked with the object of attachment which represents an individual and group (Avey et al., 2009). For example an engineer can have ownership strategic initiatives. The sense of ownership can have both psychological and behavioral effects. Even the past researchers (Pierce, Kostova and Dirks, 2001) and social practices have indicated firstly, that the prevalence of sense of ownership within human being is very much human nature secondly, people ownership also comes in towards the products/objects which are “material” and “immaterial” in nature. Thirdly the phenomena of psychological ownership can have serious consequences in terms of behavioral, psychological and emotional such as citizenship behavior and the risk person takes in order to achieve the target (Pierce, Kostova and Dirks, 2001).

## **2.3 The impact of psychological capital on psychological wellbeing and job performance of customer service job.**

In call centers interaction with customers can affect the wellbeing of employees. The call center job in itself and the relevant organizational consideration which strongly affects the wellbeing of customer service is that it has tight control over methods and procedures of works as well as conversation with customers in a variety of ways. This indicates that the system is a great source of discomfort for employees (Holman, 2003). In addition to this Holman (2003) also shed light on the fact that supportive HR practices and supportive leadership can play a vital role in sustaining the motivation of employees. So far the researches that have been carried out with respect to call center employees are from the perspective of physical environment and commitment of frontline of customer service representatives (McGuire and McLaren, 2008). A number of scholars have focused on the different aspects in enhancing the psychological wellbeing of call center employees (Malhotra, Budhwar and Prowse, 2007; Adomaitene and Slatkeviciene, 2008), job satisfaction (Rose and Wright, 2005; Dietienne, Agle and Phillips and Ingerson, 2012), turnover intention (Xiaoya and Zhou, 2013; Das Nandialath and Mohan, 2013), organizational citizenship behavior (Wegge et al., 2006), health complaints (Charbotel, 2009; Kennedy and Pretorius, 2008; Lin, Chen and Lu, 2009) and emotional exhaustion (Deery, Iverson and Walsh, 2002, Anderson and Carlson, 2004; Wegge et al., 2006; Sawyer, Sirnivas and Wang, 2008). In this study psychological wellbeing is studied that how psychological capital which is comprised of hope, optimism, efficacy and resilience (Avey et al., 2010) effects the psychological wellbeing of frontline customers service employees in call centers and these elements also presents some of the positive traits of human psychology and they are also termed as Positive Psychological Traits (Hossain et al., 2012).

At the individual level psychological capital is a psychological source that may fuel growth and performance (Luthans et al., 2005). Psychological capital is defined a psychological

understanding mediating effects of psychological wellbeing (Pierce, Ordiscall and Coghlan, 2010; Avey, Nimicht and Pigeon, 2009). Further, employee performance related studies, particularly referring to call center staff, could be hypothesized based on the propositions proposed in this paper.

## **2. LITERATURE REVIEW**

### **2.1 The impact of emotional intelligence on psychological wellbeing and job performance of employees**

Salovey and Mayer (1990) defined emotional intelligence as the “subset of social intelligence that involves the ability to monitor own’s and other’s feelings and emotions to discriminate among them and to use this information to guide one’s thinking and actions”. In addition to this emotional intelligence has four branch model (Mayer, Salovey and Caruso, 2004) the emotional intelligence is divided into four areas which are the ability to perceive emotion, to use emotion to facilitate thought, to understand thought and to manage emotion (Mayer and Salovey, 1997). Salovey and Mayer also introduce three dimensions of emotions 1.Appraisal and expression of emotions 2.Regulation of emotion 3.Utilization of emotion. In addition Mayer and Salovey (1997) are of the perspective that emotional intelligence can empower one to create and precipitate emotions that can help them in their thought processes as well as to comprehend emotions and emotional knowledge and to contemplate emotions so that they can foster emotional and intellectual growth.

In accordance with this Gundlach, Martinko and Douglas (2003) are of the view that if the person has no control over emotions it can obstruct in the cognitive processing of information which plays a very important role in carrying out task performances. For example employees who are angry or frustrated temporarily they loses their ability to focus on the other things beyond their emotions. Gundlach, Martinko and Gouglas (2003) also suggested that emotional intelligence is an important factor in enhancing self-efficacy. The reason that it is considered as a vital factor because when employees control their emotions, they make accurate attributions for past workplace events and objectively understand their own emotions and attributions.

Emotional Intelligence has also shown to be an important contributor in increasing the efficiency of employees in stressful working environments and during high level of job demands emotional intelligence is a key component in handling psychological strain and withdrawal behaviors (Richards and Pruce, 2006). In association with these Crameli et al., 2009 gave robust evidence that employees with high emotional intelligence have higher level of life satisfaction, self-acceptance and self –esteem as compare to the employees with low emotional intelligence. Clarke (2009) also suggested that emotional intelligence within the team members contributes towards higher goal setting and planning, it is one of the predictor of group satisfaction (Rozell and Scorgins, 2003). Therefore, the level of need for achievement, power or affiliation may also affect the satisfaction levels of highly intelligent individuals. For example if group performance is poor it is more likely that individuals with high emotional intelligence will undergo low group satisfaction because they have a high need for achievement. Researchers (Rozell, Gunderson and Quebbeman, 2007) are also of the viewpoint that emotional intelligence can be inculcated among employees by providing them training through placement practices, counselling and encouraging constructive behaviors through performance appraisal and the rewards systems. Research indicates that

self-esteem and high perceived worth of job will undergo an episode of less stress and the occurrences of job satisfaction will be high (Mukherjee and Maheswari, 2012). Though the high perceived worth of job is a subjective experience but it is of crucial importance in inducing negative or positive effects on the psychological wellbeing of the employees. Jian, Giga and Cooper (2008), suggested that wellbeing is positively associated with the affective and normative commitment but is negatively associated with the conditional continuance commitment (conditional continuance commitment is a state in which employee decide to continue with the organization because he is disposed to the favorable condition. It is also because the drawback of the organization has more significant impact on the individual for example increase in unemployment rate).

According to Visser and Rothman (2008), affective commitment among the call center employees mediates the relationship between emotional exhaustion and turnover intentions. They also revealed that work overload, lack of career opportunities, skill variety and emotional labor are the forecaster for emotional exhaustion and turnover intentions. But if job autonomy is high then it is less likely that emotional exhaustion and emotional dissonance will impede job tension among call center employees. In addition it will play a positive role among service workers where they have to deal with the verbally abusive customers (Goussinky, 2012). The role of emotional dissonance is of utmost importance because it is highly significantly associated with the diminishing sense of wellbeing among service workers. Cheung and Tang (2010), argued that when the organization have high expectation from the employees in terms of service delivery, they should demonstrate appropriate emotions while interacting with customers. They also identified various types of customers which are Guanxi-using customer, fair treatment customer, demanding customer, time pressure using customer and threat using customer who endeavor emotional pressures among frontline customer service representatives. Service culture is a double-edge sword. At one perspective it can deploy employees to achieve the desirable quality of the services. Simultaneously, it can pressurize employees thus generating emotional dissonance among employees resultantly jeopardizing their psychological health and their job performance (Cheung and Tang, 2010).

## **1.1 Research Question**

As per the literature based evidence found in previous studies relation to the concepts on Psychological Characteristics, Psychological Wellbeing and Job Performance, it provides a research niche to question how those concepts interlock as a theoretical frame. In par with the said, this paper is focused on the key research question as “how psychological characteristics impact the job performance with the mediating effect of the psychological wellbeing?The literature also shed light on the fact that whether it is possible to facilitate the development of certain requisite personality traits within the call centers.

## **1.2 Contribution to Knowledge**

In view of the above mentioned research question this research contributes to the customer service literature by proving empirical affirmation on antecedents of psychological wellbeing for the future references in service sector employees. The focus of this conceptual paper is on the antecedents of psychological wellbeing of frontline customer service within the complex environment settings like call centers. It is expected that testing of this model will further enhance the work of Luthans et al (2009) from psychological research to performance in the context of organizational performance. Lastly, a significant relationship that exist between the personality traits and job performance holds substantial capacity for

According to Adejuwan and Lawal (2012), a good job is comprised of “good remuneration, adequate job motivators, job and career security and conducive organizational climate lead to wellbeing which manifested in pleasurable job related attitude”. In the field of organizational behavior psychological wellbeing is a groundbreaking concept in the domain of psychology and is rarely scrutinized. According to Keyes et al., 2002 psychological wellbeing encompasses the impressions of engagement with the pragmatic challenges of life for example “foreseen meaningful goals, growing and establishing quality ties to others”. According to Diener (1997), psychological wellbeing is the reflection of people’s perspective regarding their life. Psychological wellbeing compound also comprises of cognitive and emotional elements. Diener (1997), depicts an individual wellbeing information based appraisal of one’s life of which a person gives evaluative judgments of one’s own satisfaction. The affective part of the psychological wellbeing which is the part of hedonic assessment is directed by the intensity of pleasant and unpleasant emotional experiences.

In contrast to the content discussed hereto, Ryff (1989), gave the argument that psychological wellbeing is a multidimensional construct and precipitated six dimensions of psychological wellbeing. The distilled dimension he presented for a psychological wellbeing were self-acceptance, personal growth and purpose in life, autonomy and positive relation with others. All these dimensions measures the parameters of an individual effort in being successful while combating with the existing challenges of life (Ryff, 1989). However, Guest and Conway (2004), also suggested six constructs of psychological wellbeing which are manageable workload, personal control over job, support from colleagues and supervisors, positive relationship at work, a reasonable clear role and a sense of control of involvement in changes in the organization.

It has referred that within the work environment setting, psychological wellbeing has also been associated with the work life balance which eventually leads towards life satisfaction and it is also well-known among health care workers (Buke, Ng and Fieksenbaum, 2009; Ashill and Rod, 2010). Another factor that was associated with the psychological wellbeing was leadership. Employee’s perception regarding work-life conflict is also associated with the style of leadership they experience within their work environment because it is one of the key contributor towards job satisfaction and wellbeing (Munir et al., 2012). Thus it can be concluded that work settings can impact the worker’s health and wellbeing. According to Briner (2000), it has defined psychological work environment distinctive attributes which are associated with the employee’s behavior and consequently effects their perception, thought processes and conduct. For example interpersonal contact at work environments and healthy communications with peers, colleagues can provide a platform to express themselves emotionally. It can also be contributor towards the employee’s retention. Another interesting factor that was identified as an antecedent by McGrath (2012) was bullying. Those employees who experience bullying at workplace will undergo anxiety and depression. In such threatening circumstances peers and organizational support can be of utmost important to protect and minimize the effects of mental harm and emotional disturbances (McGrath, 2012).

However, the phenomena of wellbeing are dependent on the synergy balance between physical, spiritual, emotional and intellectual factors (McGuire and McLaren, 2009). Zammuner and Gali (2005) accentuated psychological wellbeing has a vital position within work settings where service jobs interact because during such interactions emotional labor takes place. Because, the underlying impression of the job quality of the call center job is negative and has desolate psychological wellbeing repercussions (Mukherjee and Maheswari, 2012) but at the same time the researchers are of the opinion that the employees with high

# IMPACT OF PSYCHOLOGICAL CHARACTERISTICS WITH THE MEDIATING EFFECT OF PSYCHOLOGICAL WELLBEING ON JOB PERFORMANCE: A CONCEPTUAL PAPER WITH REFERENCE TO SERVICE SECTOR RESEARCH PROPOSITIONS

Javed, S.<sup>1</sup>, Sambasivan, M.<sup>2</sup> and Dissanayake, D.M.R.<sup>3</sup>

<sup>1</sup>Taylor's University, Malaysia

<sup>2</sup>Taylor's Business School, Taylor's University, Malaysia

<sup>3</sup>Department of Marketing Management, University of Kelaniya, Sri Lanka

## **Abstract**

*The purpose of this conceptual paper is to find out the impact of psychological characteristics on job performance with the mediating effect of psychological wellbeing of customer service representatives. . Relevant literature article have been perused and accordingly the proposition were proposed. It was found out from the literature that psychological characteristics such as emotional intelligence, psychological ownership and psychological capital play a vital role in the context of call center's customer service representative's job. In addition to this it was also found out that psychological wellbeing mediates the relationship between these personality characteristics and job performance. The research limitation is that conceptualized perspective of the variables mentioned have not been tested. The insight gain from this study will help in selection and recruitment strategies. The most prominent feature of the call center job is to interact with customers so while recruiting managers can identify the factors that to what extent individuals are able to cope with proactive aspects of the call center job. This conceptual paper will contribute to the customer service literature by providing practical affirmation on the antecedents of psychological wellbeing.*

**Keywords:** Call Centers, Emotional Intelligence, Psychological Wellbeing, Psychological Capital, Psychological Ownership

## **1. INTRODUCTION**

In order to understand psychological wellbeing it is essential to understand the wellbeing construct. Wellbeing is a complex construct which revolves around optimal experience and functioning. The concept of wellbeing has two different approaches hedonic approach and endemic approach. The hedonic approach is defined as to avoid pain and the endemic approach which defines wellbeing in terms of the degree to which the person is fully functioning. Wellbeing has been defined as happiness, physical condition and general perspective on life. Wellbeing is also about how person feels good about themselves and regarding their responsibilities which can often be ignored while dealing with the meticulous demands of the 21st century (Adejuwon and Lawal, 2012). Thus organizations have started to devise coping strategies in order to enhance the wellbeing of employees at the workplace so that they can achieve higher productivity, attain higher performances and ensure to sustain the motivation and retention of employees. Garg and Rastogi (2009) are of the opinion that the eminent feature of wellbeing is that higher it is, the performance, productivity and commitment of employees will considerable be above average.

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- b. Maintaining, the current management practices should be further continued up to a higher standard in the sector as a whole. For the purpose regular formal practices can be implemented as a collective programme and then processed through an identical set of experiences.
- c. Further a greater emphasis should be on recruitment and selection in star hotels, since it is highly unfavorable in this industry. Hence developing and their background, giving job recognition and considering the possibility of recruitment within the area should be considered to achievement of higher performance level of non-executive employees.

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It will help to enhance the job performances of employees. Recommendations are briefed as follows.

1. It should be improved and maintained to enhance job satisfaction and organizational commitment in the industry to improve the job performance of employees.
2. Managements of star hotels in Kalutara district Sri Lanka should emphasize fair and friendly management practices towards non-executive employees rather than continue with current practices. Because non-executive employees are not satisfied with the existing management practices. It helps to improve the job satisfaction and organizational commitment of non-executive employees in the hotel industry Kalutara district Sri Lanka.
3. Managements of the hotels in the district can develop a conducive (helpful) environment to enhance the non-executive employees' job satisfaction and organizational commitment by giving due consideration to the main motivational factors which affect job satisfaction and organizational commitment. A greater emphasis should be drawn to following improvements of non-executive employees' job satisfaction and organizational commitment.

Managements should plan, implement and review attractive motivation and remuneration packages for non-executive employees. Since wage is a significant factor in job satisfaction and organizational commitment, policies relating to salary and incentive should be fair and clear in the hotel industry. Special attention should be paid on the basic minimum salary increments.

Job security since most of the non-executive employees are under contract (43%) and casual (12%) basis. Both contract and casual basis together 55%. Some of non-executive employees who are employed in this sector assume that time factor for confirmation will be a risk.

According to the Sri Lankan culture, some people think that employment in the hotel industry is not socially acceptable. Hence, psychological dissatisfaction can be seen in the hotel industry. Therefore, social acceptability of those jobs is a necessary condition for enhancing the job satisfaction and organizational commitment of the non-executive employees.

In addition, top managements in star hotels should draw greater attention on the following.

- a. Developing an attractive remuneration package to match with the contemporary requirements, since it is in a dissatisfactory level.
  - b. Giving more attention on maintaining a formal manpower planning.
  - c. Both management and non-executive employees should develop better attitudes towards each other to accept harmonious labor management relations.
  - d. Engaging with supportive supervision considering both aspects task and people.
4. Further study suggests the following for improving non-executive employees' ability on the basis of hotel industry.
    - a. Arrange training programmes for non-executive employees. Those should be launched properly and adequately, in the Kalutara district relevant to the hotel industry (star hotels). Responsibility for training should be the concern of the management in regards to planning, budgeting, implementing and reviewing. In addition there should be a strong leadership to give clear direction and support in order to obtain the benefits from training.

According to the table 12, R Square is 0.001, which indicates that 1% of the variation in job performance (dependent variable) of non-executive employees in hotel industry (star hotels) in Kalutara district Sri Lanka is explained by the job involvement (independent variable) alone. It is not a significant amount. Therefore it is not significant impact of job involvement on job performance. Table 13 illustrated that the F value is 0.58, which is not significantly at 1% ( $p = 0.000$ ), which is not suggests that the job involvement has significantly explained the variation in the job performance.

**Table 14: Influence of the job involvement on job performance**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.643	.558		6.527	.000
1 Job Involvement Scale	-.041	.171	-.024	-.241	.810

a. Dependent variable: Job performance scale

There is no strength to influence of job involvement (independent variables) had on the job performance (dependent variable) was determined by the use of Simple Regression Coefficients of the independent variables. It reveals the above mention table 14.

## 5. CONCLUSION

- i. There was a relationship between job satisfaction and job performance of non-executive employees in hotel industry (star hotels) in Kalutara district Sri Lanka.
- ii. There was an impact on job satisfaction on job performance of non-executive employees in hotel industry (star hotels) in Kalutara district Sri Lanka.
- iii. There was a relationship between organizational commitment and job performance of non-executive employees in hotel industry (star hotels) in Kalutara district Sri Lanka.
- iv. There was an impact on organizational commitment on job performance of non-executive employees in hotel industry (star hotels) in Kalutara district Sri Lanka.
- v. There was no significant relationship between job involvement and job performance of non-executive employees in hotel industry (star hotels) in Katutura district Sri Lanka.
- vi. There was no a significant impact on job involvement on job performance of non-executive employees in hotel industry (star hotels) in Kalutara district Sri Lanka.

## 6. RECOMMENDATIONS

Pay , promotion opportunities, work itself, mentally challenging work, equitable rewards, supportive working conditions, policies and procedures ,coworkers, and supervisor's needs, aspirations and institutional benefits are the few ways of upgrading the job satisfaction and organizational commitment of an employees. The top managements of the hotel industry should consider these factors and enhance the job satisfaction and commitment of the non-executive employees to gain maximum contribution to achieve the organizational objectives.

As shown in the Table 9 the R Square is 0.272, which indicates that 27.2% of the variation in job performance (Dependent variable) of non-executive employees in hotel industry (star hotels) in Kalutara district Sri Lanka is explained by the organizational commitment (Independent variable) alone.

According to the table 10, F value is 36.646, which is significantly at 1% ( $p = 0.000$ ), which suggests that the organizational commitment has significantly explained 29.6% of the variation in the job performance.

**Table 11: Influence of the organizational commitment on job performance**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.857	.443		1.935	.056
Organizational Commitment	.848	.140	.522	6.054	.000

a. Dependent variable: Job performance scale

The strength of the influence of organizational commitment (independent variables) had on the job performance (dependent variable) was determined by the use of Simple Regression Coefficients of the independent variables. It demonstrates the above mention table 11.

**Table 12: Model summary of job performance and job involvement**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.024 <sup>a</sup>	.001	-.010	.72111

a. Predictors: (Constant), Job involvement scale  
Dependent variable: Job performance scale

**Table 13: Anova of job performance and job involvement**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.030	1	.030	.058	.810 <sup>b</sup>
	Residual	50.960	98	.520		
	Total	50.990	99			

a. Dependent Variable: Job performance scale  
b. Predictors: (Constant), Job involvement scale

**Table 7: Anova of job performance and job satisfaction**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.079	1	15.079	41.150	.000 <sup>b</sup>
	Residual	35.911	98	.366		
	Total	50.990	99			

a. Dependent Variable: Job performance scale

b. Predictors: (Constant), Job satisfaction scale

As presented in the table 6 above R Square is 0.296, which indicates that 29.6% of the variation in job performance (dependent variable) of non-executive employees in hotel industry (star hotels) in Kalutara district Sri Lanka is explained by the job satisfaction (independent variable) alone. Table 7 illustrates that the F value is 41.150, which is significantly at 1% ( $p = 0.000$ ), which suggests that the job satisfaction has significantly explained 29.6% of the variation in the job performance.

**Table 8: Influence of the job satisfaction on job performance**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.092	.382		2.861	.005
	Job Satisfaction Scale	.795	.124	.544	6.415	.000

a. Dependent variable: Job performance scale

The strength of the influence job satisfaction (independent variables) had on the job performance (dependent variable) was determined by the use of Simple Regression Coefficients of the independent variables. It illustrates the above mention table 8.

**Table 9: Model summary of organizational commitment and job performance**

Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	.522 <sup>a</sup>	.272	.265	.61538

a. Predictors: (Constant), Organizational commitment

Dependent variable: Job performance scale

**Table 10: Anova of job performance and organizational commitment**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.878	1	13.878	36.646	.000 <sup>b</sup>
	Residual	37.112	98	.379		
	Total	50.990	99			

a. Dependent variable: Job performance scale

Kalutara district Sri Lanka explained by the job satisfaction, organizational commitment and job involvement together. Table 4 illustrated that the F value is 19.163, which is significantly at 1% ( $p = 0.000$ ), which suggests that the three independent variables (job satisfaction, organizational commitment and job involvement) together have significantly explained 37.5% of the variation in the job performance. The remaining 62.5% on job performance of respondents can be impact by another reasons. Such as

- Employees will perform their job at a low level if they are not thoroughly trained and develop in all aspects of the job.
- Employees will perform at a lower level if their skill set, does not match with the job.
- Employees will perform at a lower level if they are not given the inadequate resources and outdated technology.
- Deteriorating health of an employee.

**Table 5 : Influence of the independent variables on job Performance (dependent variable)**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.191	.675		-.283	.778
1 Job satisfaction scale	.564	.142	.386	3.964	.000
Organizational commitment	.518	.156	.319	3.331	.001
Job involvement scale	.113	.140	.066	.806	.422

a. Dependent variable: Job performance scale

The strength of the influence that each of the independent variables (job satisfaction, organizational commitment and job involvement) had on the dependent variable (job performance) was determined by the use of Multi Regression Coefficients of the independent variables. The influence of independent variables together with dependent variable is shown in the table 5 above mentioned.

#### 4.3. Simple regression analyze

**Table 6: Model summary of job satisfaction and job performance**

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.544 <sup>a</sup>	.296	.289		.60534

a. Predictors: (Constant), Job satisfaction scale

Dependent variable: Job performance scale

of non-executive employees in the hotel industry (star hotels) in Kalutara district Sri Lanka. Correlation of job involvement scale and job performance was significant at the 0.810 and < 0.05.

According to the Pearson's correlation coefficients of job satisfaction, organizational commitment, job involvement in relation to job performance of non-executive employees, except job involvement other two independent variables were significantly correlated with job performance (dependent variable) regarding non - executive employees in hotel industry (star hotels) in Kalutara district, Sri Lanka .

Job satisfaction was the independent variable with the highest correlation coefficient regarding respondents when compared with the other independent variables. The bivariate analysis, Pearson's Correlation between job satisfactions, organizational, Commitment, and job involvement with job performance of the non - executive employees in the hotel industry (Star Hotels) in Kalutara district, Sri Lanka illustrated in table 2 and 3.

**Table 2: The Pearson correlation between dependent and independent variables**

	Job satisfaction	Organizational commitment	Job involvement
Correlation	0.544	0.522	- 0.024
Sig. (2-tailed)	0.000	0.000	0.810

Correlation is significant at the 0.01 level (2-tailed)

**Table 03: Multiple regression analyze of variables**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612 <sup>a</sup>	.375	.355	.57637

a. Dependent variable : Job performance scale

b. Predictors: (Constant), Job involvement scale

**Table 04: Anova of dependent and independent variables**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.098	3	6.366	19.163	.000 <sup>b</sup>
	Residual	31.892	96	.332		
	Total	50.990	99			

a. Dependent variable: Job performance

According to the above table 3, R Square is 0.375, which indicates that 37.5% of the variation in job performance (dependent variable) of non-executive employees in Star hotels in

In this study internal item consistency reliability was examined with Cronbach's Alpha test. Pilot study was done before the main study. The pilot survey was conducted with the 10% of the sample size to keeping in the view of the objectives of the main study. After the pilot survey Cronbach's Alpha was measured.

### Reliability analyzes

The content validity of the instruments was ensured by the conceptualization of the variables using the available literature and indirectly by the high internal consistency reliability of the instruments as denoted by the Alphas.

The internal item consistency reliability was examined with Cronbach's Alpha test. Reliability should be high or at least marginally acceptable 0.60 ( $\leq 0.60$ ). In this study Cronbach's Alpha of each variable have taken 0.70 and above. It suggests that the internal reliability of each instrument was satisfactory. The results of Cronbach's Alpha test illustrate the table 1 given below.

**Table 1: Cronbach's alpha coefficients**

Variables	Cronbach 's Alpha
Job Performance	0.793
Job Satisfaction	0.912
Organizational Commitment	0.777
Job Involvement	0.725

Above table 1 mentioned the Cronbach's Alpha of job performance was 0.793, job satisfactions' it was 0.912, organizational commitments' was 0.777 and job involvements' was 0.725. Therefore overall measures were generally reliable.

### 4.2. Correlation Analyzes Of Dependent and Independent Variables

In this research mainly focus to find out the impact of attitudinal factors on job performance. Pearson Correlation Coefficients Analyze used to find the relationship between dependent and independent variables.

According to the findings of the research correlation was significant at the 0.01 level of the scale of job satisfaction (independent variable) with job performance scale (dependent variable). It was 0.000 and  $> 0.05$ . There was a significant relationship between job satisfaction and job performance of non-executive employees in the hotel industry (star hotels) in Kalutara district Sri Lanka.

Also according to the findings correlation was significant at the 0.01 level of the scale of organizational commitment (Independent Variable) with job performance (dependent variable). It was 0.000 and  $> 0.05$ . There was a significant relationship between organizational commitment and job performance of non-executive employees in the hotel industry (star hotels) in Kalutara district Sri Lanka. But there was no significant relationship between job involvement (independent variable) and job performance (dependent variable)

## 5.1. Hypothesizes

The following research hypothesizes are formulated according to the research questions and objectives of this study.

**H1:** There is an impact of job satisfaction on job performance of non-executive employees in hotel industry (star hotels)

**H2:** There is an impact of organizational commitment on job performance of non-executive employees in hotel industry (star hotels)

**H3:** There is an impact of job involvement on job performance of non-executive employees in hotel industry (star hotels)

## 3. RESEARCH METHODOLOGY

According to this study questionnaires use to measure the variables (Quantitative method) . The target population of this study was the non-executive employees in hotel industry (star hotels) in Kalutara district Sri Lanka. All star hotels in the district were selected for study. Stratified random sampling method used to select the sample.

All together there were 1000 non- executive employees. Twenty designations cover under the non-executive employee categories. Sample is 10% of the entire population. Therefore 100 non-executive employees were selected as the sample of this study.

## 4. ANALYSIS

Reliability analyzes , sample analyzes , correlation analyzes of the dependent and independent variables , multiple regression analyze and simple regression analyze were done in order to achieve the set objectives and to test hypotheses of the study .

### 4.1. Validity and reliability

Validity refers to the extent to which an instrument measures, what it is supposed to measure and a measuring instrument is valid when it does, what is intended to do. The questionnaire provides a sufficient coverage in expressing an enough number of items. Those are representing variables of interest ensuring the content validity of the instrument.

Creating the questionnaire, helps to identify the variables, which were mostly related to the research problem and objectives. Hypothesizes were formulated based on these variables and indicators or elements were developed by operationalizing the variables. Content validity is concerned with the representativeness or sampling adequacy of the content of the measuring instrument, such as the items or questions it contains. Content validity of the questionnaire was protected by representing sufficient number of question items related to all the variables of interest in this study.

A measuring instrument is reliable if it regularly gives similar results at repeated administrations. Therefore, the questionnaire of this study had to be tested to see whether it gives similar results in repeated administrations. Reliability refers to a measure's stability or consistency across time (Dunn, 2001). It is how well the instrument reliably and firmly measure whatever the concept it measures (Opatha, 2003).



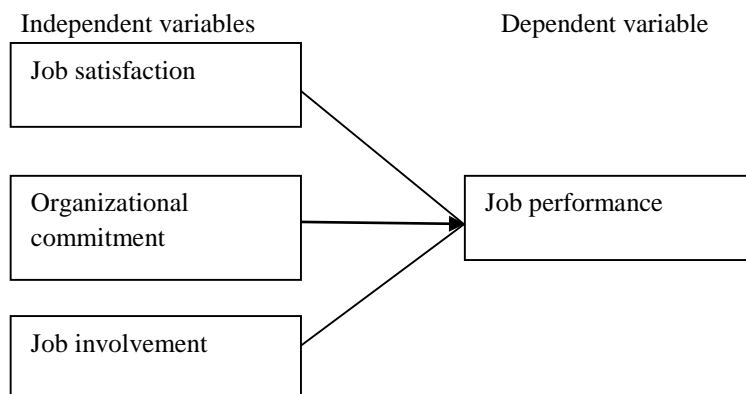
relationship with another individual, group or organization (as in (Eisenberger, et al, 1986) (American Heritage Dictionary, 1979). Some writers view commitment as a dimension of organizational effectiveness and others view it as a force that contributes to increased organizational effectiveness by improving worker performance and reducing turnover as in (Scholl, 1981) (Schein ,1970) .

Commitment would be influenced by job challenge. (Buchanan, 1974: Hall and Schneider, 1972) Opportunities for social interaction, and the amount of feed-back provided on the job (Sheldon, 1971) .According to their researches they suggest that commitment is influenced by the nature and quality of an employee's work experiences during his or her tenure in an organization.

**Job Involvement:** Job involvement can be defined as the degree to which one is cognitively preoccupied with , engaged in , and concerned with one's job as in (Saleh & Hosek , June1976) (Paullay et al, 1994). Job involvement is considered primary determinant of organizational effectiveness as in (Saleh & Hosek , June 1976) (Pfeffer, 1994) and individual motivation as in (Saleh & Hosek, 1976 , June) (Hackman & Lawler, 1971). Lodahl & Kejnerdefined job involvement as the degree of importance of ones work in ones total self-image, was first identified as an important organizational attitude (Lodahl & Kejner, 1965) there was inconsistencies in its conceptualization and measurement (Brown & Leigh, 1996). Individuals view as a main component in their life, job involvement reflects the extent to which individuals are preoccupied by and immersed in their present job. Work centrality is broader in scope than job involvement in so far as it reflects a belief in the importance that work should take in one's life, irrespective of one's current job. So, a person could report a low level of work centrality, indicating that work is not one of the most important things in his or her life, and also report a high level of job involvement because he or she is occupied in activities at work and thinks about work related issues, even when not working.

## CONCEPTUAL FRAMEWORK OF THE STUDY

According to this research non-executive employees' job performances depend on such attitudinal factors as their job satisfaction, organizational commitment and involvement of the job. Job performance of non-executive employees' is labeled as the dependent variable. Therefore job satisfaction, organizational commitment and job involvement of non-executive employees' are labeled as independent variables.



**Figure 6 : Conceptual frame work**

Griffin, R. W. 1999). Add reference. According to this study attempts to find out, "How job satisfaction, organizational commitment and job involvement (attitudinal factors) impact on job performance of non-executive employees in hotel industry (star hotels) in Kalutara district, Sri Lanka".

## RESEARCH OBJECTIVES

The following research objectives formulated for this study.

- i. To find out the impact of job satisfaction on job performance of non-executive employees in hotel industry (star hotels) in Kalutara district, Sri Lanka.
- ii. To find out the impact of organizational commitment on job performance of non-executive employees in hotel industry (star hotels) in Kalutara district, Sri Lanka.
- iii. To find out the impact of job involvement on job performance of non-executive employees in hotel industry (star hotels) in Kalutara district, Sri Lanka.

## 2. LITERATURE REVIEW

**Job Performance:** Performance is defined as the degree of accomplishment of particular task, duties and responsibilities for employee to achieve organizational goals. Job performance is of interest to organizations because of the importance of high productivity in the workplace. As in (Salanova & Kirmanen, 2008) (Hunter & Hunter, 1984). Job performance is one of the significant indicators in assessing organizational performance. As in (Salanova & Kirmanen, 2008) (Wall et al., 2004). According to Schermerhorn's definition job performance as quality and quantity achieved by individuals or group after fulfilling a task. As in (Salanova & Kirmanen, 2008) (Schermerhorn, 1989). Viswesvaran & Ones (2000), have described job performance as "behaviors and outcomes that employees engage in or bring about that are linked with and contribute to organizational goals". As in (Salanova & Kirmanen, 2008) (Viswesvaran & Ones, 2000).

**Job Satisfaction:** According to Locke's definition it as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1976). Implicit in Locke's definition is the importance of both affect, or feeling, and cognition, or thinking. When people think, they have feelings about what they think. Conversely, when people have feelings, they think about what they feel. Cognition and affect are therefore inextricably linked, in psychology of people and even in their biology. Hence, when evaluating the jobs, as when employees assess most anything important to them, both thinking and feeling are involved. Kalleberg has suggested that job satisfaction consists of two components. They are intrinsic and extrinsic satisfaction. As in (Salanova & Kirmanen, 2008; Kalleberg, 1977) According to, Hirschfield (2000), intrinsic job satisfaction refers to how people feel toward the nature of the job tasks while extrinsic job satisfaction how they feel about aspects of the work situation that are external to the job tasks (as in Salanova & Kirmanen, 2008).

**Organizational Commitment:** Commitment is defined as the totality of internalized normative pressures to act in a way that meets organizational interests. (Cohen, A. 1991). Buchanan's define "commitment is viewed as a partisan, affective attachment to the goals and values of an organization, to one's role in relation to goals and values, and to the organization for its own sake, apart from its purely instrumental worth" (Buchanan .B, 1974).

The word commitment is often used in everyday language to denote the 'sense of being bound emotionally or intellectually to some course of action which may include a person's

# 1 INTRODUCTION

All organizations are functioning basically with a purpose. If an organization wants to reach its objective in this competitive environment it is necessary to arrange its limited resources according and move towards the objective. Among the resources available in the organization human resource is the vital aspect. It acts as the basic agency for the use of other resources too. If an organization wants to reach its objective through changes in this competitive atmosphere, the human resources available in should be very skillful and dedicated or committed. It is very difficult to achieve the objective of the organization without considering of the human resource act with their, personal goals and desires.

Employee's job performance can be defined as in terms of quantity and quality expected from each employee (Khan et al, 2011). With increase in competition, firms have recognized the importance of the employee's job performance to compete in this global market because as the performance of the employees increases, it will affect organization's performance and ultimately profitability of the whole organization. Job satisfaction describes that how much happy an individual is with his or her job. According to Locke (1976) job satisfaction is a pleasurable or positive emotional state resulting from the appraisal of one's job and job experiences. Organizational commitment is a feeling of dedication to one's employing organization, willingness to work hard for that employer, and the intent to remain with that organization (Mayer & Allen, 1991). Job involvement has been defined as an individual's psychological identification or commitment to his or her job. It is the degree to 'which one is cognitively preoccupied with, engaged in, and concerned with one's present job. Job involvement involves the internalization of values about the goodness of work or the importance of work in the worth of the individual. As such individuals who display high involvement in their jobs consider their work to be a very important part of their lives and whether or not they feel good about themselves is closely related to how they perform on their jobs. In other words for highly involved individuals performing well on the job is important for their self-esteem as in (Paullay et al., 1994) (Lodahl & Kejner, 1965).

Non-executive employees in an organization have been affected by many factors to determine their job performance. Among those, the job satisfaction may be a major root to determine the degree of non-executive employees' effort in an organization (Locke, 1976). In addition to the job satisfaction, organizational commitment and job involvement are two important attitudinal factors to determine the job performance of the employees (Dienhart & Gregoire, 1993:Ahmad et al, 2010). Therefore job involvement and organizational commitment are two major attitudinal factors of non-executive employees to keep their job performance in an organization. The job performance of non-executive employees may be determined by degree of his or her job satisfaction, organizational commitment and job involvement. In this research the researcher attempted to find out impact of the attitudinal factors such as job satisfaction, organizational commitment and job involvement on determining the job performance of non-executive employees in hotel industry (star hotels) in Kalutara district Sri Lanka.

## PROBLEM STATEMENT

The success of the organization depends on the employees. (Moorhead, G., & Griffin, R. W. 1999). Attitudinal factors of employees affect the job performance of employees. Various studies on job performance and attitudinal factors indicate different results (Moorhead, G., &

# IMPACT OF ATTITUDINAL FACTORS ON JOB PERFORMANCE OF NON EXECUTIVE EMPLOYEES IN HOTEL INDUSTRY: WITH REFERENCE TO KALUTARA DISTRICT IN SRI LANKA

Perera, M.D.S.H.<sup>1</sup> and Weerakkody, W.A.S.<sup>2</sup>

<sup>1</sup>Abans Finance PLC  
shperera1@gmail.com

<sup>2</sup>Department of Human Resource Management, University of Kelaniya  
was@kln.ac.lk,

## Abstract

Nowadays all organizations have recognized the notion that the fact that an organization can gain competitive advantage in market place only if it has employees who possess positive work related attitudes. The study was made to measure the impact of attitudinal factors on job performance of non-executive employees in hotel industry (star hotels) in Kalutara district, Sri Lanka. On the scenario of continuous discussions on challenges faced by hotel industry in Sri Lanka, human involvement is yet to be considered as a significant organizational element. There are several human resources problems in hotel industry. Some going abroad for high salaries, lack of skillful employees in the hotel industry etc., which have made a huge obstruction to minimize the effort of the achieving organizational objectives in the hotel industry. All the positions (designations) in non- executive employee category of human resources have a significant role to play in maintaining the highest labor productivity in this sector. However the available literature does not provide enough empirical evidence with regard to the impact of attitudinal factors on job performance of non-executive employees in hotel industry (star hotels) in Kalutara district, Sri Lanka. Therefore, this study empirically investigated three attitudinal variables, which could influence on the job performance of the non-executive employees in the hotel industry. The data were collected from a stratified randomly selected sample of 100 non -executive employees in the hotel industry (star hotels) in Kalutara district Sri Lanka by administering a structured questionnaire, which consisted of 61 questions/statements with 5 points scale. The data analyses included Correlation, Multiple Regression and Simple Regression analyses. According to the findings of the study, job satisfaction and organizational commitment were correlated with job performance of non-executive employees but job involvement was not correlated with job performance of non-executive employees in this sector. There was an impact of job satisfaction and organizational commitment on job performance of non-executive employees but job involvement was not impact on job performance of non-executive employees in hotel industry in Kalutara district, Sri Lanka. Especially job satisfaction and organizational commitment should be considered to enhance the performance of non-executive employees in this industry as an attitudinal factors. Based on the findings valuable suggestions were provided to the managements of hotel industry in Kalutara district Sri Lanka to achieve sustainable competitive advantage through people.

**Keywords:** Job performance, Job satisfaction, Organizational commitment, Job involvement

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working environment, role conflict and family factor. The results of that study shows that only the workload and family factor are positively related to the turnover tendency of certain employees. Furthermore, other two determinants of job stress are not directly related to turnover tendency. Therefore, it is predictable that reducing the heavy workload experiencing by employees, advancing the family factor and uplifting the values of organizational culture and climate may result in the reduction of employee turnover. In terms of reducing the workload there should be a matching of the shift schedule to reflect the increased need for workers. The family factor could be developed to a better degree via adopting policies that attempt to relieve the work family conflict such as flexible working hours, day care facilities and parental leaves. Considering the organizational culture and climate, improvements could be implemented by encouraging the emphasis of rewards and reducing emotional exhaustion (Shim, 2010). Moreover, the author emphasizes that the organizational leadership should take relevant steps to promote positive organizational culture and climate via cleverly managing key organizational factors such as strengthening reward systems and providing various supervisory and practice supports which mitigates the employee's emotional exhaustion. These results have important implications that the reduction of the employee turnover can indeed be implemented to a better degree via working on the most influential factor revealed in this study.

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adequately distributed fairly and justly. Therefore as they satisfied with the salary, and hence their intention to leave the garment factory is low. Employees believe they are not given much opportunities to get promoted and hence their upward mobility is limited. This results to set them dissatisfied and finally this itself makes them leave the organization, because they feel they are too much burdened with the routinization and not having adequate liberty to get promoted. They have the opinion that, only the salary increases would be variable but no any career advancements. This makes them disappointed and decides to leave the organization when and wherever the opportunity comes. Further, community participation and instrumental communication are also important two aspects of employees to set them disappointed to leave the organization. They need social contact, social behavior, social relationship and better informal communication in order to get them motivated. This is further consistent with Horthone Study conducted by the management philosophers after scientific management. Even the Horthone study also indicated that employee are motivated and increased their productivity not by financial benefits but by human relationships. Therefore, findings from Horthone study and the current study is consistent with. Finally, changes of education and being married are inverse with the labor turnover intention. Educated employees tends to go for better jobs than non-educated employees. Those who are married need to get settled. As such, they do not try to go for new jobs. Therefore they're inverse with the turnover. Concluding, not only economic variables makes huge impact on employee turnover as felt in the conventional arena, but in the contemporary arena more than economic variables intrinsic factors such as integration, upward mobility, communication, community participation and work life balance of which comes from employees themselves decides to leave the jobs or not.

## **6. CONCLUSION**

This research's topic is 'factors affecting employee turnover in medium scaled apparel industry in Sri Lanka. Employee turnover is playing a significant role in an organisation. And Sri Lankan apparel industry is facing the burning issue of high rate of employee turnover. The research objectives were identifying the factors affecting employee turnover in medium scaled apparel industry in Sri Lanka, examining the impact of socioeconomic environment for the employee turnover and examining the impact of working environment to the employee turnover. Employee turnover means, the percentage of leaving employee amount, out of working employee amount during a particular time period in an organisation. There are number of factors which cause employee turnover and those factors are education, income, occupation, working environment etc. and the impact of socioeconomic factors and impact of organizational factors on employee turnover has been discussed. Collected data was estimated using multi-variate logit model. As the statistical tool, SPSS AMOS (version 22) was used. As the dependent variable, 'intention to leave' is used while as the intervening variable 'employee satisfaction' is used. As the moderating variable 'distributive justice' is used while independent variables employee social economic variables, organizational variables were used. Finally study conclude that work life balance, upward mobility and routinization become the core factors while pay does not become a core factor to set a felling in the mind of employees to leave the job. According to the results of the analysis, the best and most effective way to reduce employee turnover is to enhance the working environment of organizations. In order to improve the working surroundings, working on the issues such as job stress, organizational culture, and climate may come in handy. In the study of Jou et al. (2013) the job stress is broken down into four main categories. Those are workload,



relationship with the perception of just and fair treatment made by the factory. Most of garment factories have set target to its operators to achieve within a course of a particular period. This target has made them more pressure to balance the mind. The pressure can come in two ways: absolute pressure and relative pressure. Absolute pressure comes, if they could not meet the target, they themselves would be under pressure. Relative pressure means if others meet the target rather than them, again even though they have achieved the target or not, still they get the pressure. Further, setting target to employees is negatively realized even by Deming. However most of the conventional organizational psychologist believe that the work pressure can enhance the organizational productivity, but modern psychologist believe, work pressure enhance only short term productivity, not the long term productivity. In the case of centralization, always decisions are set by the higher authority, no decision making power is given to employees. Still, employees perceive it as pessimistic mind, because they can enjoy the independence of managing the job rather than just doing the job. Finally the employees those who are fed up with lack of promotions (upward mobility), routinization, lack of decision making ability (centralization) has made them more negative with the way of distributive justice that organization can do for them.

The employees with better pay, those who have opportunities to make community participation, those who can have instrumental communication & formal communication, integration (level of friendship) and education show positive feeling in the employees' mind towards the way organization treat them. Every employee works with lots of commitments. If they are given a better rewards for the commitment, they become optimistic with the organization: that is how pay and distributive justice are related. Further, the result obtained for the integration and community participation are highly important in practical aspect in the garment factories. The integration is always there. If employees has the ability get-together as a team, everybody stands as one figure in any case. Usually they themselves makes informal groups in such way that they can share the things with others. However, in negative aspect is, if one dominant member perceive the organization does not treat them well for their satisfaction, all other members would stand in the same direction. Moving to marital status, age and education; those who are married, old, males, with better education are optimistic with the organization the way it does for them. They feel organization is just and fair (Distributive Justice).

In the case of reasons for labor turnover intention, Table 4.1 indicates that intention to leave from the organization is significantly influenced by employee's dissatisfaction. It is highly significant. Further the employee dissatisfaction is mainly influenced by distributive justice where employees perceive whether they are being treated fairly and justly. Based on their judgment, level of employees' satisfaction is depended on. The study indicates that employees are dissatisfied as they feel they are not being treated justly and fairly by means of independent variables.

When employees believe that the job is routinized and as they get bored as they do the same thing all the doing, they feel unjust and unfair treatment. This cause to employee dissatisfaction and finally it direct to be a reason to leave the job. Further when employees feel that they cannot balance their personal life and work life, they tend to make a perception that that the organization does not do anything to balance their work and personal life but only the work: hence they perceive organization is unjust and unfair. This cause again to dissatisfy with the organization and decides to leave the organization, if the things proceeds again and again like this. Employees are more positive on the pay and they trust the pay is

However, the variables like Pay and community participation shows a positive significant effect on distributive justice under 99 percent confidential interval while instrumental communication and formal communication show a positive significant effect on distributive justice under 95 percent confidential interval.

Regarding the employee satisfaction, while the variables such as pay, community participation, formal communication, instrumental communication, occupation and integration show a positive relationship, the other independent variables show an inverse relationship with employee satisfaction. However the variables such as education, upward mobility, work life balance and distributive injustice are significant in making employee dissatisfied. Although, all other independent variables with inverse relationship are related with employee dissatisfaction, they are not significant. The positive variables such as pay, community participation, formal communication and instrumental communication show significant influence on employee satisfaction.

The variables such as integration, occupation, routinization, upward mobility and work life balance have a positive relationship with labor turnover intention, out of this routinization, upward mobility and work life balance has a significant effect on employee labor turnover intention under 99 percent confident interval while upward mobility is significant under 95 percent confident interval. Other variables show an inverse relationship with the labor turnover intention. However the variables such as pay, education, employee satisfaction, community participation, and instrumental communication show a significant effect on labor turnover intention under 95 percent confident interval while formal communication and marital status shows a positive impact under 90 percent confident interval.

## **5. DISCUSSION**

As per the above table 4.1, the employees feel negative in distributive justice, in case of routinization, upward mobility, work life balance, centralization and occupation. Garment Factory is a place where a higher routinization and poor upward mobility are continuously practicing. If an employee is recruited as an operator, most of the time, the same employee leaves the organization being in the same capacity. Throughout his/her career, he/she must have done the same job. This pattern of career has made them negative to perceive the organization has treated distributed the justice well. However this is par with the principles of scientific management. As per the father of management, FW Taylor articulates that higher productivity comes through specialization where specialization comes through routinization. However it is only a one-sided thinking, because it does not concern the perspective of employees. Moving to the current study, the study finds that they are negatively responded to routinization. The problem of routinization should have been overcome, if they have well-structured promotional plan. However, application of promotional plan to a factory operators is a hard concept as per the opinion of factory management. In the case of work life balance, employee's perception on the just and fair treatment by the organization on that is highly negative. The reason could be; most of the employees comes from the rural sector. Most of them are females. Once they get married, they cannot go home as they want. They find difficulties to balance their personal life. This become a major factor for them to think the organization on pessimistic mind.

Further Occupation (work pressure, work load and work responsibilities) and centralization (centralized decision making) are the second set of variables which shows a negative

Variable/s		Standardized Total Effects			Standard Errors			Two Tailed Significance		
		Distributive Justice	Employee Satisfaction	Labor Turnover Intention	Distributive Justice	Employee Satisfaction	Labor Turnover Intention	Distributive Justice	Employee Satisfaction	Labor Turnover Intention
X	Distributive Justice	0	-0.1369	0.3054	0	0.0678	0.0488	.	0.0035***	0.008***
Y	Employee Satisfaction	0	0	-0.0418	0	0	0.0214	.	0	0.0605**

Notes: Moderating variable: Distributive Justice; Intervening Variable: Employee Satisfaction; Dependent Variable: Labor Turnover Intention  
Source; Survey Data (2015)

For the study, the independent variables such as Pay (Monthly Salary and Allowance), Age (Age of the employee), Education (Level of Education), Length of Service (Years of Service), Marital Status (Whether Married or Single), Sex (Whether Male or Female), Centralization (Whether decision making is centralized or not), Community Participation (Level of Teamwork), Formal Communication (Level of Official Communication), Instrumental Communication (Level of communication of job roles and expectations), Integration (level of friendships and social interactions they have), Occupation (level of responsibilities and work pressure), Routinization (How far the job is repetitive or not), Upward Mobility (Level of Promotions and Progression), and Work Life balance (How far they can balance their employment life with personal life) were used. As the moderating variables, Distributive Justice (The level of their perception of just and fair treatment for their expectations) is used while Employee Satisfaction (Level of employee satisfaction) is used as an intervening variable. Finally Labor Turnover Intention (Whether the employee is ready to leave or not) is used as the dependent variable.

As per the Table 4.1, other than the variables such as centralization, occupation, routinization, work life balance and upward mobility, all other variables show a positive relationship with distributive justice. In the case of whether they are treated justly and fairly through centralization, occupation, routinization, work life balance and upward mobility are negatively perceived by them. Out of that routinization and upward mobility is significantly influential under 99 percent confident interval to create a perception on their mind that they are being treated badly.

**Table 4.1 Coefficients**

Variable/s		Standardized Total Effects			Standard Errors			Two Tailed Significance		
		Distributive Justice	Employee Satisfaction	Labor Turnover Intention	Distributive Justice	Employee Satisfaction	Labor Turnover Intention	Distributive Justice	Employee Satisfaction	Labor Turnover Intention
S1	Pay	0.3661	0.0501	-0.0153	0.0467	0.0266	0.0085	0.008***	0.035**	0.0257**
T1	Age	0.0335	-0.0046	-0.0014	0.034	0.0057	0.0018	0.4275	0.3221	0.3215
T2	Education	0.0839	-0.0115	-0.0035	0.0457	0.009	0.0028	0.0392	0.0466**	0.044**
T3	Length of Service	0.0169	-0.0023	-0.0007	0.0325	0.0051	0.0015	0.6191	0.4093	0.3954
T4	Marital Status	0.041	-0.0056	-0.0017	0.0282	0.0047	0.0015	0.1403	0.1006	0.0854*
T5	Sex	0.0249	-0.0034	-0.001	0.031	0.005	0.0015	0.4342	0.239	0.2389
W1	Centralization	-0.0123	-0.0033	0.120	0.023	0.0043	0.0032	0.2321	0.123	0.0912*
W2	Community Participation	0.3019	0.0413	-0.0126	0.0423	0.0219	0.007	0.0051***	0.0375**	0.0314**
W3	Formal Communication	0.0833	-0.0128	-0.0039	0.0569	0.0113	0.0031	0.0304**	0.088*	0.0671*
W4	Instrumental Communication	0.1719	0.0098	-0.003	0.0282	0.0068	0.002	0.0212**	0.0473**	0.0351**
W5	Integration	0.0475	0.0065	0.002	0.0375	0.0068	0.002	0.231	0.1013	0.1252
W6	Occupation	-0.0082	0.0011	0.0003	0.0606	0.0092	0.0028	0.9756	0.8508	0.8508
W7	Routinization	-0.2541	-0.0348	0.0106	0.0574	0.0186	0.0057	0.0001***	0.050**4	0.0083***
W8	Upward Mobility	-0.2404	0.0329	0.0101	0.0394	0.0173	0.0053	0.0124**	0.0444**	0.0292**
W9	Work Life balance	-0.3964	-0.0543	0.0166	0.0724	0.0281	0.009	0.0006***	0.0898*	0.0081***

### **3.4. Sample Profile**

Out of 2760 employees who left within last five years, a sample of 280 employees is selected. Simple random sampling will be used by the author to select the sample. Even Mani (2012) has also used the sampling method. This sample includes factory operators from 10 medium scaled garment factories in Sri Lanka.

### **3.5. Data Collection Methods**

Researcher has selected semi-structured questionnaires to collect the data. This is consistent with even Mani (2012) and Tabassum (2011). They also have used semi-structured questionnaires method as the primary data collection technique in order to collect the data.

### **3.6. Data Analysis methods**

All collected data will be statistically analyzed by using the support of SPSS (AMOS) statistical software. The validity and reliability of the data and sample are made sure by the use of expert reviews and SPSS software respectively. As the statistical model, Multi-Variate Logit model is used.

## **4. DATA ANALYSIS**

### **4.1 Model Fit and Reliability of the Data**

The study has used SPSS AMOS (ver. 21) to analyze the model fit of the research. Additionally Goodness of Fit Index (GFI), Parsimony Goodness of Fit Index (PGFI) and Root Mean Square Error of Approximation (RMSEA) also have been used. Usually, GFI should be less than one but close to one in order to have a better model fit. The current study has GFI of 0.812 and it is known as the close fit. Also in the research, PGFI of 0.588 and RMSEA of 0.0740 reported as a close fit in the conducted research model. In the case of RMSEA as per the norm, the figure should be less than 0.08 in order to have a better fit. '0' indicates a better fit. In order to make sure the reliability of the data, SPSS was used. Cronbach Alpha, being the indicator of reliability of the data was 0.63.

### **4.2 Model Estimation**

The model estimation focuses on the quantitative analysis of the gathered data. Under this section, the researcher analyzes and interprets **the** research objectives which have been identified in the section 1.3 and the equations made in the section 3.2.

### 3.3 Operationalization

**Table 3.1: Data and Variables**

Variables		Indicators	Measurements
S 1	Pay	Monthly Salary and Allowance	Continuous variable
T 1	Age	Age of the employee	Continuous variable
T 2	Education	Level of Education	Continuous variable
T 3	Length of Service	Years of Service	Continuous variable
T 4	Marital Status	Whether Married or Single	0=single, 1= for married
T 5	Sex	Whether Male or Female	0= females, 1= males
W 1	Centralization	Whether decision making is centralized or not	5 Point Lickert Scale
W 2	Community Participation	Level of Teamwork	5 Point Lickert Scale
W 3	Formal Communication	Level of Official Communication	5 Point Lickert Scale
W 4	Instrumental Communication	Level of communication of job roles and expectations	5 Point Lickert Scale
W 5	Integration	level of friendships and social interactions they have	5 Point Lickert Scale
W 6	Occupation	level of responsibilities and work pressure	5 Point Lickert Scale
W 7	Routinization	How far the job is repetitive or not	5 Point Lickert Scale
W 8	Upward Mobility	Level of Promotions and Progression	5 Point Lickert Scale
W 9	Work Life balance	How far they can balance their employment life with personal life	5 Point Lickert Scale
X	Distributive Justice	The level of their perception of just and fair treatment for their expectations	5 Point Lickert Scale
Y	Employee Satisfaction	Level of employee satisfaction	5 Point Lickert Scale
Z	Labour Turnover Intention	Whether the employees are ready to leave or not	0=Intention to Leave, 1= Otherwise

Source: Developed by Researcher (2015)

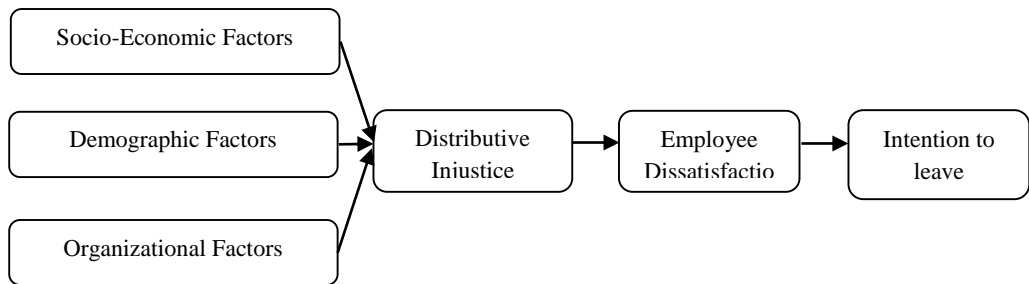
Table 3.1 shows how the variables recognized in the literature is operationalized.

more intended to quit than workers with high values. Also culture and climate of organizations influence existing employees' labor behaviors and new employees' labor attitudes (Shim 2010).

### 3. RESEARCH METHODOLOGY

#### 3.1 Conceptual framework of the study

Under the here, the researcher has developed a clear picture by using possible factors which are directly related to emerge this issue. The researcher has indicated how to emerge this issue in that framework by using influencing factors to labor turnover.



**Figure: 3.1: The Relationship between the factors affecting to Employee Dissatisfaction and Intention to Leave**

Source: Developed by the Author

#### 3.2 Formulation of Empirical Model

$$Z = f(Y_{i,j}) \dots\dots\dots(1)$$

$$Y = f(X_{i,j}) \dots\dots\dots(2)$$

$$X = f(S_{i,j}, T_{i,j}, W_{i,j}) \dots\dots\dots(3)$$

Where:  $Z_{i,j}$  stands for Intension to leave,  $Y_{i,j}$  indicates for Employee Dissatisfaction,  $X_{i,j}$  shows Distributive Justice and vectors  $S_i$ ,  $T_i$ ,  $W_i$ , stand respectively, Economic Factors ( $S_1$ ), Demographic Factors and ( $T_{1,5}$ ) Illustrates Occupational Factors ( $W_{1,9}$ ). Further Table 3.1 shows the data and variables.

abuse/harassments, the image of the garment worker in the society is not so good. Because of that people who work at garment industry do have communal disgrace about working in garment factories. Therefore they are **pulled** by careers which they can attend proudly without embracement in the society and they just leave the job at garment factory.

Worker-stress is another basic factor of working environment and when 'Stress' move up to high level then the performance of the worker get weaken. Working environment with unhealthy career stress will lead to problems especially in performance of employees (Bemana et al. 2013). Also poor reactions will be developed which leads to psychological stress if not controlled. The deprived relationships between people in the office, despotic manner of managing, low diversity of occupation, lack of using talents and deprived paying are other causative factors of stress. The little worth giving toward garment workers including female in particular is another factor. Therefore the workers tend to search for other jobs which provide them peaceful and pressure free conditions in their working life (Kelegama and Epaarachchi 2003). Leadership performance is a factor which is also relevant to the working environment. According to Porter and Steers (1972) employee turnover is influenced by supervision. And leadership is significantly associating with turnover (Mobley et al. 1979). Also Michaels and Spector (1982) said that perceived consideration of the supervisor/leader leads to satisfaction and commitment. And they have further emphasised the 'supervisor's consideration' affects satisfaction of employee which leads to their intention that can cause turnover. Leadership performance has a straight negative correlation with labour turnover intent (Malik, Danish, and Munir 2011). In the sense the Strained Employer-Employee Dialogue is another constrain which deficiently effects for the worker turnover. It indicates the poor relationship between the employer and their employee which make the stressed relationships. These tensed relationships are indicated while the management formulates demands upon workers such as impracticable targets. Workers will be forced in carrying out work further than the own capability. Absences, being short of sufficient preparation of managers in central and higher ranks and broke professionalism will be created with this type of situations and the associate just get frustrated with the company.

Since local apparel industry faces an elevated worker turnover, lot of clothing companies suffer from direct labour scarcity. This problem mainly happens due to macro environment aspects. But still the problem can be solved for an extent by positively changing the leadership approaches and human resource of working atmosphere (Jayakody 2008). In a considerable scale, regulations ensuring constitutional rights of the workers are avoided. Several owners are likely to assume as, if they are providing careers, the employee should obey whatever the action they take and the systems they practice. As an example by listed owners, merely 35% do accept the stipulation of EPFA (Employment Provident Fund Act). Current society and especially many employers have the attitude that a trade union is a problem for the business. Therefore the employers have a negative thinking about influencing the trade unions to rise for the development of business's efficiency. When it comes to free trade zones, by many industrial units, the employee regulations are buried sake of keeping factory's issues within factory borders. With all these dominance of the owners, Trade Union formation is discouraged (Kelegama and Epaarachchi 2003). In such situations the frustrated worker does leave the job for jobs which they have freedom to speak, which gives the supposed respect and funds and which they can complain and fight for their rights. Working group's unit size is also a factor which predicts the employee turnover. According to Porter and Steers (1972) employee turnover is influenced by working group unit size. Shim (2010) stated that organizational culture and climate are considerable interpreters of employees' purpose to quit their jobs. Workers with lower values of company's climate and culture are



when needs of career do not equivalent with worker's capabilities, resources, or needs (Rode 2004 cited in Bemana et al. 2013). Job stress happens when personals face with works which they are inadequate in intervening and their minds are incapable to adapt (Bemana et al. 2013). Job stress is impacted by motivation among employees (Bemana et al. 2013). The highly motivated employees are willing more to work (Bemana et al. 2013). And job stress influence employees' satisfaction and overall performance of work (Bemana et al. 2013). Stress is indicated by absents and the rate of absenteeism does indicate turnover signs of future time periods (Cohen and Golan 2007).

Bakan and Buyukbese (2013) revealed that the employees' income level is having a significant relationship with job satisfaction. According to two authors, for this 'job satisfaction' there were five specific factors as: satisfaction with compensation, social satisfaction, work satisfaction, satisfaction with supervisor and satisfaction with promotion. Further they emphasized all these aspects of job satisfaction are having a positive relationship with the employee income level. Also they have clarified, employees with high income levels indicated significantly superior/higher level of satisfaction and employees with low level of income have indicated comparatively lower level of satisfaction. Consequently the lower levels of income of worker do lead to employee turnover in organizations. Work-family conflict is "a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in **some** respect". Therefore work/occupation does make turnover by conflicting with family condition (Good, Page and Young 1996).

### **2.2.3 Impact of Working Environment on Employee Turnover**

Working condition is indicated as a connected factor to employee turnover and productivity as well (Sujeewa 2011). Kelegama and Epaarachchi (2003) state that small to medium garment factories which are having a risky factory layout with overcrowded workspace are not favourable for workers for their factory life and mainly quantities of garments do not have the essential amenities like cafeterias and lavatories. Further they clarify that, also breaking times are not given for essential needs and especially widespread problem for the female workers within the factory itself is 'harassment' which is 'sexual harassment' in particular. At the same time disparity of allowance and facilities lead to continual movement of personnel for companies with better working conditions (Kelegama and Epaarachchi 2003).

For the working environment, human resource practices also inclusive. According to Sujeeva (2011) many human resource practices are impacting on employee turnover of an organization, some of them are selection realistic job **previews**, selection procedures, socialization programs, promotion opportunities and compensation practices. Grievance handling is the degree to which current grievance handling practice is accepted as justice and fair enough (sujeewa 2011). Turnover intention means when a worker intends to leave his/her current job and intention to leave is a strongest predictor of employee turnover (Wickramasinghe and Wickramasinghe 2011). According to Sujeeva (2011) it has made sure that deprived grievance handle exercises lead to high employee intentions to turnover. Employee career development practices in Sri Lankan garment industry were confirmed as relate to the turnover negatively (sujeewa 2011). In the sense when there is career development practices are exercised among employees of factories then those employees are not getting intention to leave the current working place.

Kelegama and Epaarachchi (2003) have mentioned that social embarrassment of the garment worker is another factor and In Sri Lanka since poor functioning surroundings and female

characteristic is many women employees resign the job after marriage (*Dheerasinghe 2003*). Therefore sex is a directly affecting factor to employee turnover in garment factories. Education will be described under the “socioeconomic factors impacting employee turnover”. According to *Dheerasinghe (2003)* many women employees resign the job after marriage. But *Mobley et al. (1979)* has said that Family responsibility and marital status are decreasing employee turnover. Occupation will be clarified in socioeconomic factors part. And as said by *Mobley et al. (1979)* length of service is one good predictor of employee turnover.

## **2.2.2 Impact of Socioeconomic Variables on Employee Turnover**

As the socioeconomic factors, the ‘Education’, ‘Income’, and ‘occupation’ are used in the report. Therefore the impact of education, income and occupation on employee turnover will be examined in this part. An individual’s educational level has an important inverse correlation or else a direct correlation on that person’s level of career satisfaction. Education makes a portion of a person’s entire human assets. And it has a major effect on that person’s degree of career satisfaction. Education makes direct impact on career satisfaction via expectations & indirect impacts via other determinants of satisfaction such as income and additional job features. Therefore the job becomes a channel to indicate the effect of education. Individuals with more elevated levels of learning are much more convinced to get safe employment/careers with improved degrees of payments plus bigger talent levels. When all impacts of education on career satisfaction are considered, it can be concluded that investments in education/learning produce many financial and nonfinancial benefits. Accordingly, people who **have** higher degrees of education/learning, generally indicate higher career satisfaction degrees (*Fabra and Camisón 2009*).

According to the above model hourly wages, characteristics of worker and characteristics of employee’s job are affecting job satisfaction. And educational level and career characteristics do impact on hourly wages. Also education does impact on job characteristics. Finally the individual characteristics (marital status, age & gender) are the variables which describe/explain hourly salary, career characteristics plus educational levels (*Fabra and Camisón 2009*). When individuals or the employees are having career satisfaction, they tend to like the organization they work in. when the employees tend to like the organization they naturally become loyal for the company and those individuals do not get the intention to leave the organization. But they get the need of stick in to their company further or forever. Therefore if the employees are satisfied with the organization the employee turnover of an organization does decrease. Accordingly in an organization when there is a higher level of education then the level of employee turnover is low. In Sri Lankan garment industry, a significant amount of associates who are educated and skilled with training do fly abroad for jobs (*Dheerasinghe 2003*). But according to *Joo and Park (2010)* offering training programs (a sort of education) does help to reduce the employee turnover rate by making the worker confident, skilful and getting promoted in their career life. It means education level does collision turnover.

Same time employees who are having low occupational status are more towards leaving job than high occupational status employees (*Thomas and Martin 1979*). Accordingly the occupation status impacts for employee turnover. Occupation vice, tenure is another big factor of turnover. Tenure is the extent to which a career of an employee is stable. According to *Porter and Steers (1972)* employee turnover is influenced by tenure. There is a negative relationship between tenure and employee turnover (*Mobley et al. 1979*). When discuss about the factor ‘occupation’, Job stress means harmful bodily and emotional reactions that happen

optimistic sanctions by the organization itself. When this reduces turnover rate does increase. “Upward Mobility” is the possibility of moving through different levels of organization for its employees such as promotions and progressions. According to Porter and Steers (1972) employee turnover is influenced by promotion policies. Even persons who were paid more for their brilliant performance were less probable to give up their career (Sujeewa 2011). As Thomas and Martin (1979) among these 8 determinants, 2 variables do interfere and make the intention to quit the career and it primarily shows the motivational procedure of intent to leave of the employee. And the authors mention, the first interfering variable is ‘Job Satisfaction’, it means extend that positive and touching orientation in the direction of membership in the organization. Further they emphasise that, the firstly discussed 8 determinants act first on “Job Satisfaction” and produce a roundabout collision on intention and influence the motivational procedure to quit or to stay. Here Organization needs to consider exact requirements of employees for benefits to be perceived positively by them (Warnasooriya and Jayawardena 2011). *In other words companies should make employees satisfied to make them stay. Even people do involve on the job, if they are satisfied with the job only. When it comes to apparel industry (Sri Lankan)* It was verified that, there is a optimistic relationship between job involvement with job performance and job performance is having a significant and positive relationship with job satisfaction in all type of employees (kottawatta 2007). But according to Michaels and Spector (1982) total satisfaction contribute turnover slightly only.

The next arbitrating variable is ‘Opportunity’; it means extend of availability of substitute occupations in the environment (Thomas and Martin 1979). According to Michaels and Spector (1982) when there is a good job market, there are plenty of job opportunities. The job searching behaviour can get as an enhanced predictor of actual turnover (Chen et al. 2008). In such conditions employee turnover is encouraged (Thomas and Martin 1979). As said by Thomas and Martin (1979) the next 2 determinants do motivational impact directly on intention to leave other than circuitous motivation via ‘satisfaction’ and one of them is “Community Participation” which means involvement in communal life of a society. As an example Sri Lankan garment factories involve the employees in social works such as blood donations and conduct talent shows and competitions for employees. Other one is “Work Commitment” and means, extend which the career position constitutes middle life attention of employees (Thomas and Martin 1979). Job commitment is having a positive relationship with job performance in garment factories (kottawatta 2007). Therefore it can be mentioned as the lower the work commitment is higher the employee turnover. But Michaels and Spector (1982) stated that commitment does not affect much on turnover.

‘Age’, ‘Sex’, ‘Education’, ‘Marital Status’, ‘Occupation’ & “Length of Service” are the other 6 demographic variables and they motivate both “Job Satisfaction” and “Intent”(intention to leave or to stay) directly (Thomas and Martin 1979). According to Porter and Steers (1972) employee turnover is influenced by age. Michaels and Spector (1982) said that ‘age’ lead to whole satisfaction and commitment. In the sense, there is negative relationship between age and turnover (Mobley et al. 1979). Cohen and Golan (2007) have mentioned that, an individual intention to turnover can be seen by personal absenteeism. And further they mention, as **demonstrated** here in the strong and negative effect of age on turnover intentions, this purpose might be stronger in youthful workers. According to Kelegama and Epaarachchi (2003) In Sri Lanka, by manufacturing sector labour force, a considerable amount is employed in garment industry and its one prominent characteristic is that the Female dominance by gender composition is very high. 85% (350,000) of industry labour force were women during 2010 (BOI Sri Lanka 2013). The issue which occurs with that

## 2.2. The Factors Affecting Employee Turnover

According to Thomas and Martin (1979) there are bunch of variables which does affect the employee turnover in organizations. They are inclusive of 10 determinants as pay, integration, centralization, instrumental communication, formal communication, routinization, upward mobility, and distributive justice, length of service, age, education, occupation, marital status, and sex. Other than centralization, routinization and education as they indicates all other variables shows a positive impact on labour turnover intention.

According to Thomas and Martin, 'Pay' means salary of employees which is given for their service. And Porter and Steers (1972) have stated that the employee turnover is influenced by pay. Accordingly in Sri Lankan garment industry there are poor incentive structures. Poor Incentive Structures mean the poorly prearranged inducements and pay systems which have set up by employers. Kelegama and Epaarachchi (2003) have mentioned that the employees are not considered when making allowances in most factories and Employer is only attentive for the productivity and mostly to improve productivity only, they are making productivity payments. But even in that, though owners supposed to make inducement schemes, the payments only will be 'flat rate' (Kelegama and Epaarachchi 2003). This is a major reason for the workers to leave jobs at this type of factories. Leavers have too negative attitude towards 'pay' than staying workers (Hellriegel and White 1973). And they tend to go for better careers with fair salary systems. As Thomas and Martin (1979), 'Integration' is the involvement of organizational associations such as having good friends at work. When employees are having good friends at work they feel happy at the workplace and they tend to like the career life at the job place. Even in garment factory also the employees' negotiation with each other is much more. As the Sri Lankan culture, even at job place, the 'friends' is something they just want. Therefore when they do not find friends at work they get unhappy in career life and start to have turnover intentions. Even Porter and Steers (1972) have stated that employee turnover is influenced by co-worker relations factor. Thomas and Martin (1979) stated "Instrumental Communication" means extend of transmitting of information for every employee about their job role that they have to play or about their duty they have to do. Also According to Porter and Steers (1972) employee turnover is influenced by nature of job requirements. Then if employer is not giving guidance to employees of what role they have to play in their jobs then employees are not aware of job requirements and will feel lost and get fear about current working place and tend to leave the organization. "Formal Communication" does mean extend of officially transmitting of information to the members of the organization according to memos. Formal communication is very important among employees to make them aware of meetings, assemblies, work orders, etc. but when employees are not informed what they are supposed to do next and what the organisation is up to, they will get surprised with each company movements, get inconvenient with company procedures and try to find a transparent work place.

'Centralization' is to what extend is the power concentrated in the organization like contribution to make decisions. When making decisions employer should consider all employees of organisation too. When employers think only about enhancing productivity employees might have inconvenience and tend to leave. 'Routinization' does mean extend of repetition of performance of the particular job. There is a high volume repetitive environment in export garment industry and employees in apparel industry in Sri Lanka are involved in routine labour (Wickramasinghe and Wickramasinghe 2010). Same repetitive work is something which make worker fed up about his/her work and the employee does try to resign the job. "Distributive justice" means extend of following the conformity of norms by sharing

## **G Employee Age Factor**

From the study this concept comes out that workers age also contribute towards the decision to stay or leave the job. It is crystal clear; age has positive relation with organizational commitment (OC) and job satisfaction. A mature person has more confidence and patience on the work place than a younger one. According to Wright and Hamilton (1978), with increase in age a person has greater level of prestige and confidence. Just like the same age has direct relation with OC, if a worker is getting older then he supposes to be more committed with the organization.

## **H Employment Tenure**

AS per Nawaz (2009), employment tenure is time period that a person spent on the job in an organization. It has negative relation with voluntary employee turnover (VET). When an employee getting older in a company and promoted on senior designation then he/she has less willingness to quit or leave the job. According to Becker's (1960) long period of employment increases organizational commitment (OC) that reflect maximum investment had made in the company. Employees who had great relationship with colleagues and emotional attachment with company, they have too much to lose while leaving the organization. This type of cases is very rare in textile industry of Pakistan. It is theorized that workers who spent longer time, normally they get a supervisory position where they feel comfort or satisfaction so that turnover rate automatically remain in acceptable level.

As Dheerasinghe (2003) indicates that most of the female workers leave the industry after marriage while a considerable number of trained workers leave the industry for foreign employment. The average labour turnover worked out per factory is about 60 per cent per annum. Taking the labour migration within the industry into account, the net number of persons leaving the industry each year is estimated as 25 per cent. As per Dheerasinghe (2003), there is the problem of maintaining a stable work force and much effort required to maintain quality and productivity in the labour force.

As Ahamed, F (2013) points out according to his study on, *Improving Social compliance in Bangladesh's Ready-made Garment Industry*, many have investigated that working conditions in the apparel sector are below standard and do not meet the ILO standards. Labour standards and rights are commonly ignored in the apparel factories in Bangladesh: poor practices include the absence of trade unions, informal recruitment, and irregular payment, sudden termination, wage discrimination, excessive work, and abusing child labour. Moreover as Ahamed (2013) points out that workers suffer various kinds of diseases due to the unhygienic environment and a number of workers are killed in workplace accidents, fires and panic stampedes. Absence of an appropriate mechanism to ensure the enforceability of the available laws for protecting workers' rights and maintaining workplace safety continues to be a concern in the Apparel sector. As the sector is an important foreign exchange earning component, some changes are required.

In addition to that even Kumar (2006) focusses; that garments workers are concerned with long working hours or double consecutive shifts, personally unsafe work environment, poor working conditions, wage and gender discrimination. Indeed, employers treat the apparel workers as slaves, exploiting workers to increase their profit margins and keep their industry competitive in the face of increasing international competition (Kumar A., 2006).

## **A Job Satisfaction (JS)**

Job satisfaction is more about happiness on the work place. It creates interest in the job. We can define job satisfaction as ‘A pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences’ (Spector, 1996)

## **B Organizational Commitment (OC)**

Organizational commitment plays an important role in restricting an individual’s mind toward resignation. Committed employees always have better attendance record and stay for long period of time in an organization as compared with non-committed employees (Nawaz 2009).

## **C Work Environment / Supervisor Behavior**

Working conditions play very crucial role to increase job satisfaction and organizational commitment in the workforce community. The work environment includes factors or features that have all work conditions and situations for employees (Dawson, 1986).

## **D Less Career Growth**

Textile industry in Pakistan has less potential for low class workers to grow and make career for long run. There are certain reasons involved in this particular factor for instance ninety percent workers are uneducated, lack of proper skills, less personal relations in the industry, a large amount of textile workforce belong to rural area and even some of them dont have enough sense to grow or develop their self. This is a true fact that all the textile workers belong to poor families and have responsible for bread & butter for whole family. In this situation workers never argued to promote on higher designation and by this employer get benefit.

## **E Monetary Reward**

Monetary reward has been defined in such a way like cash or equivalent that an employee receives against his services from the employer. Here equivalent reward includes fringe benefits, medical facilities and provident fund etc. Monetary rewards have negative effect on VET.

## **F Better Employment Opportunity**

Better opportunity for the labour force reflects the employment available in another organization but in the same industry. It is clear that a skilled worker of textile sector cannot join agriculture sector because it requires some other skills that majority of workers don’t have. So their area of getting opportunity is only the same sector. It might be possible that this opportunity is better because of improved designation, salary increment, better working condition or good behavior of Manager etc. normally it has been seen the new entrants have more intension to leave the job after short period of time in comparison with five or seven years old employees.

### 2.1.1 Employee Turnover (ET)

Employee turnover is widely considerable issue for the organizations. It means when a person quit from the given job for any reason. It is called as "employee turnover". According to Nawaz (2009) "A permanent movement beyond the boundary of an organization" (p. 142). Employee turnover is not calculated in a very complicated way to show discrimination between voluntary or involuntary turnover. Most of the time organizations relatively simple formula of turnover such as the equation below (Marchington and Wilkinson 1996, 97).

$$\frac{\text{Leavers in Year}}{\text{Average Number of Staff in Post during Year}} \times 100$$

This equation does not differentiate between people who left because of dissatisfaction, due to illness or retirement case etc. in this current era mostly people decide to leave the job because they already have better offer from another employer. Better opportunity creates willingness to leave the job. According to Nawaz (2009), under nearly all conditions the most accurate single predictor of labor turnover is the state of the economy. When jobs are plentiful, voluntary movement is high; when jobs are scarce, voluntary turnover is small (1958, p. 100).

"Employee turnover" has got a substantial attention from organizational management, HR professionals and industry psychologists and it's been a most stubborn issue which is costly for an organization. An organization's productivity and endurance can be critically affected by general labour turnover rates of labour force of the organization (Sigma assessment systems inc 2012). The term "employee turnover" can be mentioned as "overall/crude employee turnover" too. "Overall/crude employee turnover" represents all leavers together voluntary and involuntary which include the workers who resign, retire or made redundant. With turnover data, the special breakdowns like redundancy-related turnover or resignation levels are calculated which are helpful to evaluate effectiveness of people management in an organization. And the employee turnover rate is high when there is minor unemployment rate (CIPD 2012). "Employee turnover refers to the proportion of employees who leave an organization over a set of period (often on a year-on-year basis), expressed as a percentage of total workforce numbers" (CIPD 2012).

### 2.1.2 Voluntary Employee Turnover (VET)

Voluntary Employee Turnover means when an employee leaves the company with his own intension. It might be due to better job opportunity, existing job dissatisfaction, bad working conditions or negative behavior of supervisor etc. high level of voluntary turnover seems to be negative for the organizational growth. According to (Nawaz, 2009), 'explanation of voluntary employee turnover has important implication for organizational manpower planning. It is widely believed that a high amount of VET adversely influences organizational effectiveness; that is the degree to which organizations achieve their goals' As highlighted by Nawaz, the factors affecting to labour turnover as shown below;

a broad global brand range inclusive Pierre Cardin, Gap, Victoria's Secret, Nike, Liz Claiborne etc. It developed to a main contributor of export revenue of Sri Lanka. Sri Lankan garment industry is the prime employer of the manufacturing sector of the country and it's providing nearly 75 percent occupations straight and circuitously. And the industry is having a quite upright position in worldwide market (Kelegama 2005). The researcher has identified that the medium scaled industry has been suffering from higher labor turnover since year 2000. Labour turnover is a movement of individuals in to jobs and out of jobs over a particular period. In the periods of 2000 to 2012, the average monthly labor turnover rate is 6.6 percent. This situation is a problem to survive the organization. Actually it is a considerable barrier to the succession of the garment factory.

## **1.2 Research problem**

Employee turnover has become a burning issue in Sri Lankan apparel industry. Therefore it would be significant to do research on this topic. It was observed since 2000, the garment industry suffered by a high labor turnover rate. No study has been conducted in the industry to identify the impact of it. Therefore, it is intended to study what are the factors influencing on medium scale apparel industry in Sri Lanka to increase its Labor Turnover?

## **1.3 Research Objectives**

The core objective of the study is to analyze the factors affecting employee turnover of medium scaled garment industry in Sri Lanka. And the researcher would like to study the following secondary objectives.

- i. To analyses the factors affecting employee turnover in medium scaled apparel industry in Sri Lanka.
- ii. To see the impact of socio-economic variables on employee turnover.
- iii. To see the impact of organizational factors on employee turnover.

## **1.4 Research question**

Followings are the research questions.

- i. What are the factors affecting employee turnover in medium scaled apparel industry in Sri Lanka?
- ii. What is the impact of socio-economic variables on employee turnover?
- iii. What is the impact of organizational factors on employee turnover?

# **2. LITERATURE REVIEW**

## **2.1 Theoretical Review**

As Nawaz (2009) indicates that there are two types of employee turnover happen in companies, voluntary and involuntary. Voluntary employee turnover involves employee's intention to quit the job or decide to give resignation from job. It can be due to better opportunity, job **dissatisfaction**, supervisor's bad behavior, less chances of growth etc. And involuntary employee turnover is that when an organization fires employees by itself. It can be like retirement cases, organization needs to cut cost, restructure or downsizing, low performers firing from the job or dismissals, permanent disability or employee death case etc.



# ANALYSIS OF FACTORS AFFECTING TO EMPLOYEE TURNOVER IN MEDIUM SCALED APPAREL INDUSTRY IN SRI LANKA

Rajapaksha, U. G.

*Department of Management and Finance, Kotelawala Defence University, Ratmalana, Sri Lanka*

## Abstract

*The topic of this research is the factors affecting employee turnover in medium scaled garment industry in Sri Lanka. There were three research objectives; first objective is to identify the factors affecting employee turnover in medium scaled garment industry in Sri Lanka, second objective is to examine the impact of socioeconomic factors on employee turnover and third objective is to examine the impact of organizational factors affecting on employee turnover intention. Literature indicates employees are influenced by pay as the economic variables; age, marital status, sex, education as the demographic variables; upward mobility, integration, occupation, formal and instrumental communication, community participation is the organizational variables to influence on labour intention to leave the organization. As the sample 280 operators were selected from ten garment factories within the Colombo district. As the base of selection of the sample, operators within the factory was selected using simple random sampling method while factories were selected using purposive sampling method. Semi structured questionnaire was used as the quantitative data collection tool and interview also used as the qualitative data collection tool. Collected data was estimated using multi-variate logit model. As the statistical tool, SPSS AMOS (version 22) was used. As the dependent variable, 'intention to leave' is used while as the intervening variable 'employee satisfaction' is used. As the moderating variable 'distributive justice' is used while independent variables employee social economic variables, organizational variables were used. Finally study conclude that work life balance, upward mobility and routinization become the core factors while pay does not become a core factor to set a felling in the mind of employees to leave the job.*

**Keywords:** Education, Distributive Justice, Labor Turnover

## 1 INTRODUCTION

### 1.1 Study Background

The Sri Lankan apparel industry has begun in 1960s, manufacturing garment for home country market. But in 1970, the export leaning manufacturing of readymade garments has begun in the industry and it did spread out swiftly following liberalization of Sri Lankan economy during 1977. Throughout 1980s apparel exporting was developing speedy, consequently in 1986, the textile "selling overseas" became the biggest portion which is 27 percent by all exports of Sri Lanka. Garment industry has become the biggest foreign swap earner (US\$400Mn) in 1992 which has overtaken the tea trade of the country. Within 1992, the Board of Investment presented the "Two Hundred Garment Factory" program which was a tempting package for all clothing manufactures. This made producers shift to rural regions in the country and this is known as the 'turning point' of Garment industry of Sri Lanka. And the program tended to establish 163 factories by the year 1995. Local producer is supplying

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## 5. CONCLUSIONS AND RECOMMENDATIONS

Based on previous studies and feedback from people, study identified nine of organizational cultural factors are affecting for knowledge sharing in banks as trust, collaboration, communication among staff, information systems, reward system, organizational structure, management practices, shared vision and employee union.

According to the analyses, employees' perceive information systems which facilitate knowledge sharing exist at the highest level in the organizational culture of selected bank branches. Employees perceive shared vision, trust among employees also exists at a higher level. Collaboration, management practices, communication among staff and organizational structure exists fairly in the organizational culture at presents. The level of existence of, rewarding systems and employee union is very low for the moment.

There is no significance difference between the employees' perceived existence of the cultural elements in bank A and bank B.

### Recommendations

In order to ensure knowledge sharing culture in selected bank branches, managers should focus on improving the existing of cultural elements further. Therefore, managers should take actions to improve trust among employees, create organizational structure which facilitate knowledge sharing further. Some rewards systems can be introduced to appreciate employees who shared knowledge among others.

### Future research

This study investigates six branches of two public sector commercial banks in Western province only.

Future researchers can expand the study to investigate different organizational cultures and followings are recommended.

- Expand the number of branches
- Investigate banks in other districts
- Study private sector banks
- Conduct a comparison of the culture of public and private sector banks
- Examine other organizations of service sector

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**Table 10: Independent sample t-test**

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								L	U
Trust	0.593						0.07	-0.18	0.1
			-0.57	139.46	0.57	-0.04	0.07	-0.18	0.1
Collaboration	1.013	0.316	-0.11	149	0.91	-0.01	0.09	-0.19	0.17
			-0.11	148.99	0.91	-0.01	0.09	-0.18	0.16
Communication	1.274	0.261	-1.2	146	0.23	-0.08	0.07	-0.21	0.05
			-1.22	145.93	0.22	-0.08	0.07	-0.21	0.05
IS	1.343	0.248	-0.44	150	0.66	-0.03	0.07	-0.18	0.11
			-0.45	149.69	0.65	-0.03	0.07	-0.17	0.11
RewardSys	2.458	0.119	-0.14	150	0.89	-0.02	0.13	-0.28	0.24
			-0.15	149.99	0.88	-0.02	0.13	-0.28	0.24
OrgStructure	4.228	0.042	-0.44	148	0.66	-0.05	0.11	-0.28	0.18
			-0.44	147.72	0.66	-0.05	0.11	-0.27	0.17
MgtPractice	1.416	0.236	-1.91	135	0.06	-0.2	0.1	-0.4	0.01
			-1.94	134.86	0.06	-0.2	0.1	-0.4	0
SharedVision	2.859	0.093	-0.55	150	0.58	-0.06	0.1	-0.25	0.14
			-0.56	149.92	0.58	-0.06	0.1	-0.25	0.14
Actions of employee unions	0.931	0.336	0.86	150	0.39	0.15	0.18	-0.2	0.51
			0.86	147.44	0.39	0.15	0.18	-0.2	0.51

According to table 3, it can be seen the employees' perceived existence of those elements in bank A and bank B is not severely difference.

**Table 9: Employees' perceived existence of cultural elements in bank A & bank B**

Elements	Mean	
	A	B
Trust	3.89	3.93
Collaboration	3.70	3.71
Communication	3.76	3.83
IS	3.94	3.97
Reward Systems	2.59	2.61
Organizational Structure	3.26	3.31
Management Practice	3.56	3.76
Shared Vision	3.88	3.93
Actions of employee unions	2.35	2.20

**Independent sample t-test result**

Since Sig> 0.05 in all variables, all hypotheses are rejected. Therefore, there is no significance difference between the employees' perceived existence of cultural elements that facilitate knowledge sharing in bank A and bank B.

## Data analysis

Data was analyzed in descriptive statistics and independent sample t-test. SPSS statistic 17.0 software package was used for analyzing the data.

Cronbach alpha is closed to 0.78 for all variables which confirms the scale reliability.

## 4. RESULTS AND DISCUSSION

180 questionnaires were distributed to all branches as 30 questionnaires for each six branch.

Only 152 questionnaires were returned with 84.44% responded rate.

The responded level of each branch is summarized in below table.

**Table 7: Responded rate in each branch**

Districts	Bank A		Bank B		Total	
	No. of responded	% of responded	No. of responded	% of responded	Total responded	% of total responded
Colombo	30	100	24	80	54	90
Gampaha	25	83	24	80	49	82
Kalutara	27	90	22	73	49	82
<i>Total</i>	<i>82</i>	<i>91.11</i>	<i>70</i>	<i>77.78</i>	<i>152</i>	<i>84.44</i>

## Employees' perceived existence of cultural elements

As shown in Table 2, employees' perceived existence of Information system is the highest. In banking sector, IT plays a bigger role (Tan, Lye, Ng, & Lim, 2010). Employees perceive sharing common vision and trust among employees exist at a higher level. They perceive the rewards for sharing knowledge and involvement of employee union towards sharing knowledge is very low.

**Table 8: Employees' perceived existence of cultural elements**

Element	Mean
Trust	3.91
Collaboration	3.71
Communication	3.79
IS	3.95
Reward System	2.60
Organizational Structure	3.28
Management Practice	3.65
Shared Vision	3.90
Employee union	2.28

### 3. METHODOLOGY

#### Procedure

The procedure adopted in this research is described in below.

1. A thorough literature review was carried out to identify the elements of organizational culture that facilitate knowledge sharing among employees.
2. After identifying the elements, indicators of those elements were identified based on previous literatures.
3. After finishing the theoretical review, several people who actively engage in the industry was interviewed to clarify the validity of identified elements & the indicators to the banking industry and was modified them based on their feedback.

#### Sample

Six (6) branches were selected as two (2) branches from each district representing public sector banks of Bank. A & Bank B based on their collaboration & willingness to support for the study. And 30 questionnaires were distributed to each branch.

#### Respondents

Respondents are employees of selected banks. It represents employees from management level & operational level. In the management level, Managers, Deputy Managers & Assistant Managers are included and in the operational level, staff assistants are included.

#### Data Collection

A questionnaire was developed with five point Likert scale (1= strongly disagree to 5= strongly agree).

#### Hypothesis

**H1:** There is a significant difference between employees' perceived existence of trust in bank A and Bank B.

**H2:** There is a significant difference between employees' perceived existence of collaboration in bank A and Bank B.

**H3:** There is a significant difference between employees' perceived existence of communication among staffs in bank A and Bank B.

**H4:** There is a significant difference between employees' perceived existence of information systems in bank A and Bank B.

**H5:** There is a significant difference between employees' perceived existence of reward system in bank A and Bank B.

**H6:** There is a significant difference between employees' perceived existence of organizational structure in bank A and Bank B.

**H7:** There is a significant difference between employees' perceived existence of management practices in bank A and Bank B.

**H8:** There is a significant difference between employees' perceived existence of shared vision in bank A and Bank B.

**H9:** There is a significant difference between employees' perceived existence of employee union in bank A and Bank B.



### ***Shared vision***

Hoe (2007) indicates that if there is a shared vision, it can be seen, employees' caring about same issue, employees' commitment to a common purpose and employees' enthusiasm for pursuing collective goals in the organization.

### **Banking sector in Sri Lanka**

Banks play an important role in the economy of Sri Lanka. Banks have the capability of providing the liquidity to the whole economy (Central Bank of Sri Lanka, 2010). Banking system facilitates to personal in different ways such as deposit of money, remittance of money, lending money and borrowing money.

The banking sector of Sri Lanka consists of Licensed Commercial Banks and Licensed Specialised Banks. The difference between Licensed Commercial Banks and Licensed Specialised Banks is based on the scope of activities they can carry out; Licensed Commercial Banks have a wider scope but Licensed Specialised Banks are licensed only to conduct specialised banking activities and are not authorized to accept demand deposits and deal in foreign currency (Thalgodapitiya & Bhoumik , 2012). The total number of the bank in the country is 33 where 12 domestic licensed commercial banks (including 02 state owned banks), 12 foreign banks and 09 licensed specialised banks (Central Bank , 2011).

Banks accounts 58% of the total assets of the financial system of the country at the end of year 2013 (Central Bank , 2013). In first eight months of 2012, total assets of this sector have increased by 15% (Central Bank of Sri Lanka, 2012).

Even though both public and private sector perform in the industry, Sri Lankan banking sector mainly dominates by public sector. Further, the public sector commercial banks hold 41% of total banking system loans (Thalgodapitiya & Bhoumik , 2012). The main reasons of holding the dominant position in the country are widely spreading of the public sector banks across the country and the credibility among the people towards this sector. However the competitiveness of the sectors has increased the services such as ATM, credit cards, telebanking and internet banking (South Asian Micro Finance Network, 2007).

Sri Lankan banking sector has some key challenges of managing the quality of assets, improving the risk management abilities and managing the impact of world market instability (Thalgodapitiya & Bhoumik , 2012).

A bank generally consists of Chairman, General Managers, Deputy General Managers, Assistant General Managers, Regional Managers, Assistant Regional Managers, Branch Managers, Deputy Branch Managers, Assistant Branch Managers, Staff Assistants, Customer care assistants and Peons. The part of the success of banks is employees. Banks focus is the knowledge culture so that they provide various local & overseas training programmes for their employees to improve their knowledge and perform well in the bank. (Peoples' Bank, 2010).

And also software as a tool plays an important role. Moreover the employees' ability of using these systems is significant for a better transfer of knowledge.

### ***Reward System***

Goh (2002) mentioned there should be a reward system for other criteria like knowledge sharing except focusing financial outcome based on competition between groups and it is important. According to Jahani et al. (2011), intrinsic reward for knowledge sharing and availability of a system to contribute knowledge to databases is more valuable.

### ***Organization structure***

Wang & Ahmed (2003) emphasized that informal structure (relationship) of the organization increases knowledge creation & transfer. According to their study, Boundary-lessness (ability of access to information without constraints), fluidity (knowledge flow smoothly), interactiveness (cross functional & interorganizational interaction) and flexibility (restructuring when it is needed) create informal relationship. Further Syed-Ikhsan & Rowland (2004) Status of confidentiality of document and up & down communication of organization structure affect the knowledge sharing in the organizations.

### ***Management practices***

Goh (2002) identified following as management practices for facilitating knowledge sharing Behavior of leaders consistent with the philosophy of openness, Team work & cross functional teams, Levels of employees skills & competencies are consistent (employees are well trained) Jahani et al. (2011) mentioned leadership style of mentor who concern and helps to develop subordinates' job related competencies is important for knowledge sharing. Cabrera & Cabrera (2005) indicated that following management practices foster knowledge sharing. Work design, Staffing, Training & Development, Performance appraisal and Compensation & rewards. Al-adaileh (2011) emphasized management adopt many practices for fostering knowledge. Job enrichment & enlargement, delegation the power of decision making. Giving training and development and designing the effective reward systems. Minbaeva (2006) mentioned, work design (job enlargement, job rotation) and flexible working arrangements (job sharing, part time, flexitime) increase intrinsic motivation of knowledge sharing.

### ***Shared vision***

A vision is a business perception which guide to something new and it sees beyond what is already being utilized, what will be emerged and invented (Malaska & Holstius, 1999). Shared vision means a clear and common image about the anticipated future state which is identified by members of the organization. (Hoe, 2007). This business framework leads all business efforts to achieve common goals and it creates a platform for knowledge sharing in organizational members (Al-adaileh, 2011).

### ***Employee union***

With the discussion of the peoples in the industry, it was identified that the employees' union of the banks also affects the knowledge sharing of employees. This kind of union is established with the purpose of employees' welfare. The union monthly issues a booklet to all the members about news in the industry, new rules & regulations, changes in existing rules & regulations, issues, problems they face etc. Further the union arranges meeting with the members regularly.

Existence of these elements in the organizational culture cannot be found directly in any organization. Therefore identifying their indicators is helpful.

### **Indicators of the elements of organizational culture**

Indicators of the elements of organizational culture on knowledge sharing were identified based on different literatures.

#### ***Trust***

Cook & Wall (1980) identified two components of trust as faith and confidence. According to the authors, faith refers the "faith in the trustworthy intension of other employees" and confidence refers the "confidence in the ability of other employees."

#### ***Collaboration***

According to Nejad & Saber (2012), dimensions of collaborative work environment are workgroup support, immediate supervisor support and employees attitude. As per Heerwagen et al. (2004), three dimension of social aspect of collaboration are awareness, brief interaction and working together. Awareness: involves aware of the things happening around and the knowing the meaning of events and actions. Brief interaction includes communications and exchange information. Working together means more than one people collectively working for a joint product.

#### ***Communication among staff***

Keyes (2008) indicates that face to face communication dominates in the knowledge sharing effort. According to his study, open discussion among employees also paves the path for easy and successful knowledge sharing. Azudin et al. (2011) mentioned that story telling is a good method for communicating knowledge. Ganjinia (2012) emphasized that two way communication like disclosure information from employees to managers and vice versa is an important tool for disseminate the explicit knowledge.

#### ***Information system***

Syed-Ikhsan & Rowland (2004) identified key indicators of technology for knowledge sharing as infrastructure, tools and knowhow. According to him technology facilitate for the effective knowledge sharing. Up to date infrastructure helps to codified knowledge to systems and tracks of people with particular expert and enables quick communication among them.

individual will not intentionally harm another when given the opportunity to do so” and competence-based trust that “an individual believes that another person is knowledgeable about a given subject area” ( IBM Corporation, 2002).

### ***Collaboration***

Collaboration generally means “individuals or organizations ‘working together’ to address problems and deliver outcomes that are not easily or effectively achieved by working alone” (Keast & Mandell, 2009). Effective knowledge management practices enhance and encourage collaboration among employees (Clarke & Cooper, 2000). Collaboration can be seen as the support and the help that occur among the employees (Saeed, Tayyab, Anis-Ul-Haque, Ahmad, & Chaudhry, 2010). The collaborative work environment significantly and positively affect to the employees’ intention for sharing knowledge. (Nejad & Saber, 2012).

### ***Communication among staff***

Communication among staff is another important factor for knowledge sharing and it speaks of the interaction of them via oral and body language (Al-Alawi, Al-Marzooqi, & Mohammed, 2007). Both formal and informal communications ensure the building of trust and relationship among employees (Azudin, Ismail , & Taherali , 2011).

### ***Information system***

Information systems mean all people, procedures, and technology which are used for day-to-day operations, analysis, problem solving and decision making (Holowetzki, 2002). Especially in the banking sector, IT plays a bigger role through managing all data & information and communicating to enhance the speed of knowledge creation and exchange (Tan, Lye, Ng, & Lim, 2010).

### ***Reward systems***

Two forms of reward systems can be identified individual based rewards and group based rewards. Individual-based reward “is based on the individual contribution of valuable knowledge” and group-based reward “is based on the contribution of the whole group through knowledge sharing to the firm performance” (Lee & Ahn, 2006). Sharing knowledge or not is led by the personal benefits given and the intention of reciprocity (Amayah & Nelson , 2010)

### ***Organizational structure***

Many layers in the organization structure slower the flow of knowledge (Al-Alawi, Al-Marzooqi, & Mohammed, 2007). Ganjinia (2012) found that there is a highest relationship between bureaucracy structure and knowledge distribution. In a knowledge economy, organizational structure should be more emotionally inclusive, trust and informality based and more flexible ( Wang & Ahmed, 2003).

### ***Management practices***

Management is the crucial factor for any organizations and it is one important player in encouraging knowledge sharing in organizations. For fostering knowledge, management adopt many practices like job enrichment & enlargement, delegation the power of decision making, giving training and development, designing the effective reward systems and transformational leadership (Al-adaileh, 2011). Leadership is vital for knowledge sharing (Islam, Ahemd, Hasan, & Ahmed, 2011).

## **Organizational culture in Knowledge sharing**

There is a connection between organizational culture and knowledge sharing (Azudin, Ismail, & Taherali, 2011). If knowledge sharing integrated to the organizational culture and to the performance appraisal processes, it creates the foundations for a knowledge culture which is vital for the organization success (Karkoulian & Osman, 2007). Cheng et al. (2008) suggested that in order to promote knowledge sharing in organization, it is necessary to create an environment based on more people-oriented rather than the technical oriented. (Cheng, Ho, & Lau, 2008).

Cultural attributes can be considered as significant factors which determine the level of knowledge sharing in the organizational context (Al-adaileh, 2011).

### **Elements of organizational culture**

Many authors have identified existing of several cultural elements ensures the knowledge sharing practice in the organization.

Saeed et al. (2010) investigated the role of cultural attributes with reference to knowledge management practices (knowledge creation) of corporate sector employees in different management positions. Study found collaboration affect for knowledge creation through knowledge sharing since collaborative culture facilitate knowledge sharing by reducing fear and creating openness among staff members. Further study revealed that trust also affect for knowledge creation since when trust is high, employees exchange knowledge and finally resulting knowledge sharing.

Islam et al. (2011) investigated the relationship between organizational cultural elements and knowledge sharing in service organizations. Study found that trust, communication between staff and leadership have a positive and a significant relationship with knowledge sharing. Al-Alawi et al. (2007) investigated the role of cultural factors as interpersonal trust, communication between staff, information systems, rewards and organizational structure for the success of knowledge sharing and found those factors play an important role in defining the relationships among staff and break obstacles in knowledge sharing.

Al-adaileh (2011) investigated the impact of various cultural factors including: trust, collaborative working environment, shared vision and managerial practices on knowledge sharing within the context of Jordan's Phosphate Mines Company's (JPMC) and revealed that these factors have a significant and a direct impact on knowledge sharing. Based on these studies, study identified trust among employees, collaboration, communication among staff, information system, reward systems, organizational structure, management practices and shared vision are the elements of organizational culture that impact on knowledge sharing. Different literatures have explained that how elements in the organizational culture impact and relate to a successful knowledge sharing

### **Trust**

Trust is significant for a successful organizational knowledge-sharing effort ( IBM Corporation, 2002). It should be visible, pervasive and the credibility should start from the upper level of the organization ( Ngah, Hoo, & Ibrahim, 2008). Interpersonal trust is based on the one's anticipation of reliability from others (Politis, 2003). It can be seen two types of trust that involve in the knowledge-sharing process as benevolence-based trust "in which an

## **Knowledge sharing**

Knowledge sharing is the central key for the success of knowledge management strategies (Karkoulilian & Osman, 2007). Sharing knowledge indicates communicating knowledge within a group of people in a formal institution or informal (Cheng, Ho, & Lau, 2008). Harder (2008) defined knowledge sharing as the voluntary and social process of transferring, absorbing and reusing existing knowledge in order to serve an organizational end.

Knowledge sharing is also referred to the setting up task information and proficiency to help others and to cooperate with each other to resolve problems, create new ideas, or implement regulations & procedures (Wang & Noe, 2010). There are two non-exclusive methods of sharing knowledge as closed network (person to person) and open network (in an open repository) (Cheng, Ho, & Lau, 2008). Closed network sharing means person to person sharing and depends on personal trust and relationship, open network refers the sharing of knowledge among members in a group (Cheng, Ho, & Lau, 2008).

And also knowledge sharing can happen in two ways as horizontal and vertical; in horizontal, knowledge is shared among employees in the organization and in vertical, knowledge shared between partners such as suppliers, collaboration institutes and customers (Suppyuenyong & Islam, 2006).

Based on the SECI model of Nonaka & Takeuchi (1995), Tan et al. (2010) emphasized this model is useful for managing knowledge sharing. SECI stands for Socialization (Converting Tacit Knowledge to Tacit Knowledge); Externalization (converting Tacit Knowledge to Explicit Knowledge); Combination (converting Explicit Knowledge to Explicit Knowledge); Internalization (converting Explicit Knowledge to Tacit Knowledge). On the other hand, factors like recognition, identity in the group and self-esteem also create a desire to share employees' knowledge among others (Cheng, Ho, & Lau, 2008).

### **Importance of Knowledge sharing**

Knowledge is a critical asset to both individual and organizations in a competitive environment (Cheng, Ho, & Lau, 2008). Knowledge sharing is critical for firms for its success (Davenport & Prusak, 2000). Institutions pursue knowledge since it is an important component for organizations as a sought-after asset (Tan, Lye, Ng, & Lim, 2010).

In the study of Azudin et al. (2011) cited four importance values of knowledge sharing as; (1) Knowledge includes ideas; processes and information and be considered as an intangible product. Nowadays these intangible products have a more share than the traditional, tangible goods in the economy. (2) Knowledge sharing creates new knowledge and is important for achieve competitive advantage for businesses. (3) Knowledge sharing ensures existence of the knowledge of employees even though they leave the organization. (4) Knowledge sharing facilitates distribution of knowledge everywhere in the organization since knowledge obsolete quickly because of changes in business, technology, and social and therefore it is required sharing new knowledge with others.

If it can be managed properly, knowledge sharing affects to improve work-quality and skills in decision-making, solving problems and competency which will give more benefits to the organization. (Syed-Ikhsan & Rowland, 2004). Therefore an effective knowledge sharing is vital for the organization to get benefit from the knowledge of its employees that they have generated (Cheng, Ho, & Lau, 2008).

Gampaha & Kalutara. The study investigates only six (6) selected public sector commercial bank branches of Bank A and Bank B. Six branches were selected based on their support and readiness to give information. The focused employees are the employees in selected branches; Manager, Deputy Managers, Assistant Managers and Staff assistants in all departments (Pawning, Saving, Loans, Clearing, Current A/C, Debt Recoveries).

## **2. LITERATURE REVIEW**

This section defines and discusses knowledge, knowledge sharing, and organizational culture in knowledge sharing based on previous studies.

### **Knowledge**

Devenport & Prusak (2000) defined knowledge as “a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information”. In the study of Ahmad and Daghfous (2010) mentions that many authors generally define knowledge as a state of knowing that constitutes facts, concepts, principles, laws, casual relationships, insights, judgments, intuition, and feelings. Knowledge is a social attribute and it involves creating, sharing, transferring and storing of accumulative knowledge (Al-adaileh, 2011). It originates and is applied in the minds of knowers. (Davenport & Prusak, 2000). Knowledge can be seen in terms of cognitive, experiential, situational and emotional factors (Al-adaileh, 2011).

Supyuenyong et al. (2006) mention researchers identify two perspective of knowledge as theoretical and practical. According to their study, theoretical perspective mainly discusses the definitions and looks the distinguished interpretation of data, information and knowledge and their relationship. Knowledge is not information and it is more complicated than information; information is organized data and knowledge is the interpreted information based on understanding and is affected by personality of the person (Lee & Yang, 2000; Al-Alawi, Al-Marzooqi, & Mohammed, 2007). In the practical perspective, it considers the nature of the knowledge (dimensional aspect) and its operational domain aspects (Supyuenyong & Islam, 2006). Different dimension of knowledge are Ontological (individual and collective knowledge), Epistemological (explicit & tacit) and source of knowledge (internal & external) (Saeed, Tayyab, Anis-UI-Haque, Ahmad, & Chaudhry, 2010; Supyuenyong & Islam, 2006). Explicit knowledge is formal and systemic which can be shared and communicated among others while tacit knowledge is greatly personal, hard to be formalized and exist in human’s mind (Al-adaileh, 2011). Knowledge required for different level of the organization is different and this operational domain aspect of the knowledge can be classified in to two levels as corporate related knowledge and operation related knowledge (Supyuenyong & Islam, 2006).

Tiwana (2001) emphasized three characteristics of knowledge in his book as experiential nature, collaborative nature and reciprocity. According to that, experiential knowledge is stored as scripts. Knowledge gain from experience and the part that can be transferred is the experiential knowledge. In a collaborative processes that employees do in their job creates new knowledge. People should be willing to share their knowledge and this reciprocity decides the success of any knowledge management system. The most interesting characteristic of knowledge is its uniqueness and originality (Al-Alawi, Al-Marzooqi, & Mohammed, 2007).

defined as “a pattern of shared tacit assumptions that was learned by a group as it solved its problems of external adaptation and internal integration” (Schein, 2009).

The research focuses only on banking sector which is a major contributor in service sector. In any economy, banks play a very important role. It helps to efficiently direct the savings into investment and lead the growth of the economy (Tan, Lye, Ng, & Lim, 2010). In Sri Lankan context, banking sector contributes to the GDP over 8% and it is growing strongly (Central Bank , 2011). The Sri Lankan banking sector is dominated mainly by public-sector banks and half of the sector assets belong to the public sector (Thalgodapitiya & Bhoumik , 2012). Moreover, the banking sector contributed over 53% of financial system assets in the country (Central Bank , 2013). Further, the public sector commercial banks hold 41% of total banking system loans (Thalgodapitiya & Bhoumik , 2012). The public sector commercial banks have a dominant position in the economy with its wide presence across the country. On the other hand, there is a high credibility among people for this sector than private sector for as much as having immoral practices disclosed in the private sector.

Banking sector employees are one of the key success drivers in a bank. The productivity of the bank depends on them. The employees in the banking system are basically knowledge workers. Their knowledge includes banking operations, IT, banks policies, interest & loan rates, accounting, knowledge of customers and competitors (Khedkar, 2011).

## **1.2. Problem Statement**

Banks provide various facilities in order to improve employees’ knowledge to assure their continuous performance. Sharing knowledge increases organizational performance. But, if there is no supportive organizational cultural elements for sharing individual knowledge, bank has to face many difficulties such as new employees would take a long time to adapt to the existing system, employees would repeat same mistakes many times and employees’ knowledge would exit with them once they leave the organization. These all result to delay in work, time consumption and finally, inefficiency and low productivity in the bank. Therefore, it would be interested to investigate the existing organizational culture on knowledge sharing in banks since culture varies from organization to organization. In this respect, what would be the situation of the organizational culture for knowledge sharing in selected banks branches?

## **1.3. Objectives of the Research**

This study aims to investigate various elements of organizational culture on knowledge sharing in selected public sector banks branches in Western province of Sri Lanka. Specific objectives are:

- i. To identify the cultural elements, which facilitate knowledge sharing, in banks.
- ii. To identify the employees’ perceived existence of cultural elements that facilitates knowledge sharing in selected branches.
- iii. To examine the difference of employees’ perceived existence of cultural elements in selected public sector banks.

## **1.4. Scope and the limitation of the research**

The study focus on Western province where the number of branches and the customer base is higher than the other provinces and this province comprises three districts: Colombo,



# A STUDY OF THE ORGANIZATIONAL CULTURE FOR KNOWLEDGE SHARING IN SELECTED BANK BRANCHES

Pushpamali, N.N.C.

*Department of Management of Technology, University of Moratuwa, Katubedda  
chamarij@uom.lk, chamarijayasekara@yahoo.com*

## Abstract

*Knowledge has become the most vital resource for gaining competitive advantage. Banks has recognized the relevance and importance of sharing knowledge among employees. The purpose of this research paper is to analysis the factors that influence on knowledge sharing in selected bank branches. Research identified several factors; trust, collaboration, communication among staff, information system, reward systems, organizational structure, management practices, shared vision and employee union facilitate knowledge sharing in organizations.*

*The questionnaire was used for data collection. Gathered data was analyzed in descriptive statistics using SPSS software. Study reveals that Information systems, sharing a common vision and trust among employees exist at a higher level in the selected organizational culture as knowledge sharing elements than other identified factors. Findings of this study provide useful information and support to extend the understanding of banks in motivating their employees to engage in knowledge sharing practices.*

**Keywords:** Knowledge sharing, Organizational culture, Public sector banks, Elements in organizational culture

## 1 INTRODUCTION

Knowledge can be recognized as one of the most significant resources of an organization. Knowledge is defined as “a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information which originates and is applied in the minds of knowers” (Davenport & Prusak, 2000). Basically, there are two types of knowledge as Tacit and Explicit. Tacit knowledge is “practical, action-oriented knowledge or “know-how” based on practice, acquired by personal experience, seldom expressed openly, often resembles intuition.” and Explicit knowledge is “academic knowledge or “know-what” that is described in formal language, print or electronic media, often based on established work processes, use people-to-documents approach” (Smith, 2001).

In this knowledge era, knowledge plays an important role in any businesses (Tan, Lye, Ng, & Lim, 2010). As stated by Nonaka (1993), knowledge gives a competitive advantage for any organizations. Therefore, it can be recognized as a valuable resource not only to individuals but also to the businesses. People are more concerned on how to utilize knowledge nowadays in order to get the maximum benefits from it because once knowledge is shared; it turns into a public good (Cheng, Ho, & Lau, 2008). Therefore knowledge sharing is essential. Knowledge sharing means exchange and communicates knowledge with others (Cheng, Ho, & Lau, 2008). However, knowledge sharing would not happen automatically unless there is a supportive culture for that (Tan, Lye, Ng, & Lim, 2010). Organizational culture can be

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- I. Friday is the day records highest return of the whole week. Conversely Monday generates the lowest return throughout the whole week. In Friday there is a positive return and it is significant at 1% level and Thursday also a positive return and it is significant at 1% level same as Friday. But Monday effect is different from this, it is a negative return and this effect is not significant as well. Tuesday displays the negative return but it is not higher negative value as Monday. At the middle of the week it is convert to a positive return when compare to the average return of the day.
- II. Moreover we analyzed that is there any influence to the model from the war to change the Day of the week effect anomaly in the country. Therefore the sample again disseminated as prewar period and post war period. By referring to the findings of this research can concluded that the average return of the day is higher in the Post War (.004242) period than prewar (0.003369) period. In prewar period Friday return is only significant at 1% level and it is having positive return. But in Post War period Friday and Thursday having positive returns at 1% significant level. Both periods Monday and Tuesday is having negative return. So therefore it as clear that there is a Day of the week effect in CSE.
- III. Based on the day of the week effect investor can have a buy or sell decision. This day of the week effect analysis is much more important to the speculators rather real investors. And also when estimating the buy or sell decision we should concern on the trading cost also (In current stock market context it is 0.24 rupees per transaction). The abnormal gain of the transaction can derive by imagine the deal according to the theory of day of the week effect. If so return can derive the day wise profit by subtracting the Monday return from the Friday return. In both cases with adjusted to the trading cost and without adjusted to the trading cost can derive a significant value at 5% level as per the model we used.

Along with the above findings it can recommend that, when an investor going to buy shares it is better to buy shares on Monday ,unless Tuesday. Because both Monday and Tuesday there is a negative return and consequently the share prices are lower. Meanwhile research recommends that if investor wants to sell those it would be on Friday hence the return is high on Friday and therefore share price goes up. Through he can makes immense gain by selling shares. Thursday and Wednesday also better for the selling decisions rather buying shares. But investor can gain the unsurpassed return through buy shares on Monday and sell shares on Friday. If an investor can manage his investing portfolio bestowing to the analysis of the day of the week effect he would be able to gain abnormal profits from the transaction. According to the analysis of returns research concludes that the day of the week effect exists in the CSE as well.

This research morally focuses on the day of the week effect. There is an opportunity to future researchers to analyze other trading strategies like Holiday effects and Month of the year effect collaborate with the Day of the week effect. The results gain from this research depicts the overall market picture. Hence it gives a broader picture, if future researchers can do further research on this area sector wise or rather company wise it will give more reliable findings than this. It will be the research gap of this research reference.

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**Graph 2: Buy & Sell Decision**



According to the graph investor should buy the share at the point A and sell it at the point B. Through that the investor can maximize his return. (Capital gain). Because he can buy the share at lower price on Monday and he can sell it at highest price on Friday at highest market price.

When determining the actual share price, it should adjust it by the trading cost. When an investor going to do a share transaction he have to bear a cost for that transaction. To calculate the real gain we should include the trading cost as well. Estimated trading cost applied in current share transactions is Rs. 0.12 per transaction. When calculate both buying and selling this amount should add twice. Because investor have to incur this trade at both buying and selling. Therefore in this case also share price should adjust the return by Rs.0.24 for a best interpretations. As per the above table t value of the return adjusting to the trade cost and without trade cost both are above the standard level (2). Other than this both options are significant at 5% level. Therefore the conclusion is that , decision of buying shares on Monday at the lowest rate and selling shares on Friday at highest rate is significance and reliable as per the above output.

## 5. CONCLUSION

This study examine the day of the week effect anomaly within the Sri Lankan stock market for the period from 2004 to 2013 using the All Share Price Index (ASPI) and the database consist of 2,397 days of trading. The daily log return has been calculated by using the closing price of the ASPI. Then the average return of a day is calculated by using the formula of abnormal return. For analysis purpose the total sample has been segregated into two period after evaluating by the Sri Lankan economy. Then calculated prewar period return and the post war period return and along with that impact of the Day of the week effect. This research findings purely depends on the one sample t test. Research applied the Test value as the average day return of the sample. This research trailed the Test value for both situations, prewar and post war. And it enhance the reliability of the research problem. The results demonstrate that, Day of the week effect exists in the CSE. This research can be summarized based on the objectives.

## Buying & Selling Decisions

One of the objective of done this research is to facilitate the investor in their buying and selling decisions rather depending on the brokers. Wise investor should able to rapidly response to the changes of the share prices. Then only the investor can gain 100% from his investment. If the investor have a respectable understanding about the share price movements cause by the day of the week effect he might get the correct buy or sell decision at the correct time.

Most probably the day of the week effect facilitate the decisions of speculators rather real investors. (Long term investors). Because speculators are the investors who are worrying about capital gain. Long term investors are more concerned on dividends. They do not response to short price changes. Waiting for last. But speculators highly response to the price changes in short run and quickly doing buying and selling in short run. Accordingly the below Table 5 represent how investor can be assisted his buying and selling decision referring to the Day of the week effect.

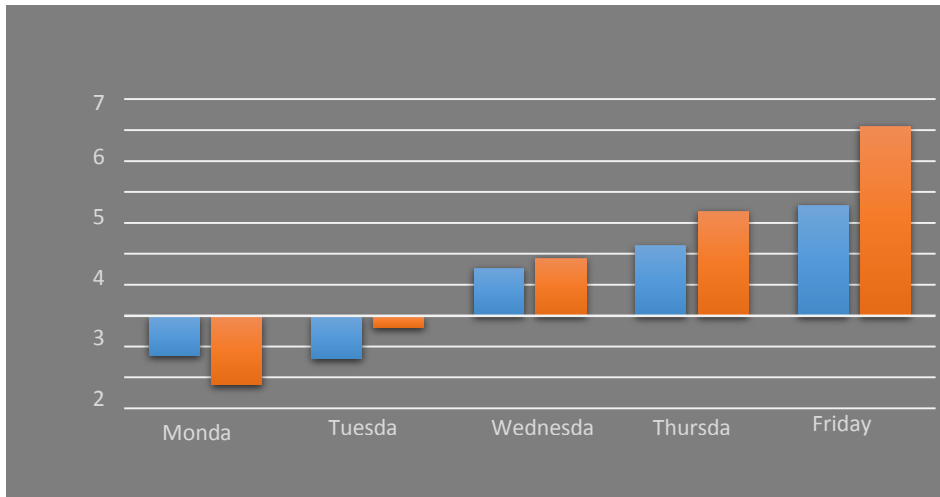
**Table 4: Buying and selling Decision table**

	<b>t</b>	<b>Df</b>	<b>Sig. (2-tailed)</b>	<b>Mean Difference</b>
Buy and sell (Without Adjusting Trading Cost)	3.383	512	.001	.38220
Adjusting Trading Cost	<b>3.391</b>	512	<b>.001</b>	4.06579

In here this research will observe if the day of the week effect exists in the CSE how the investors could gain abnormal profit through utilize the effect. As per the previous consultations there is a positive return on Wednesday, Thursday and Friday. Conversely negative return on Monday and Tuesday. Highest return records on Friday and lowest return on Monday.

positive abnormal returns. Day effect is same in two scenarios. The difference is in return. Return per day is increased after the war. We can derive that increment by this diagram below.

**Graph 1: Analysis of Daily return in prewar period and Post War Period**



This graph represents the average daily return adjusted by Test value. Graph demonstrates that the prewar and post war situation as well as daily returns. Accordingly during the prewar period Monday is the day generates lowest return and also Friday generates the highest return. During the post war period the lowest return recorded on Monday and the highest return generates on Friday as previous. At this juncture Monday and Tuesday generates negative returns on both cases, during the prewar period as well as post war period. On Monday comprehends the highest negative return. That is why Monday noticed as the day which records the lowest return.

During the post war period the average return has been increased compared to the prior to war period. When distillate the Monday and Tuesday, the negative effect of the return is minimized throughout the post war period. In other words throughout the post war period Monday and Tuesday loss has been decreased. It can assume that this increment is due to the development of the economy after the end of the war. After the war ends there are different kind of businesses have been arose in North and East areas. Cultivation, Construction industry, Banking industry and bloom in several industries. Besides infrastructure development also there. These advances directly and indirectly influence on the share market transactions. And towards the bloom of the share market and as well as daily returns.

Further observation of this graph is the percentage of growth. It can notice that on Monday to Friday the percentage of the increment of the return has been increased gradually. According to the previous calculations it can derive a positive return just on Wednesday. Thursday and on Friday. It depict that Thursday growth of the return increase a percentage higher than the Wednesday. Friday increment of the return is higher than the Thursday. Therefore the conclusion is that, in the post war period the significance of the day effect is also increase compared to the prior to war period.

generated at least normal day return for the period. so therefore it can conclude that prior to war period exists Day of the week effect since highest return on Friday and adverse return on Monday. Furthermore positive abnormal gains on Friday, Thursday and Wednesday with negative returns on Monday and Tuesday.

**Table 3: Post War Table**

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Tuesday	-2.240	226	.026	-.15468	-.2908	-.0186
Monday	-.387	219	.699	-.02442	-.1489	.1001
Wednesday	1.880	221	.061	.10589	-.0051	.2169
Thursday	3.398	228	.001	.22881	.0961	.3615
Friday	6.155	215	.000	.33122	.2252	.4373

The results expressed in above table creates a transformation of significances and the returns compared to the previous scenario which considered under prior to war period. By analyzing the provided results of the above table will help to observe that the mean return for the day is 0.004242. After the war period economy tends to a growth. There is a development in several fields such as GDP, Employment, Infrastructure, New business areas etc. All these modifications directly and indirectly influence on the share market transactions. By the way the average return per day also increase up to some extent. (From 0.003369 to 0.004242).

The day effect also get several changes from previous scenario to this. The t values shows the abnormal return of the each day for the period of the post War and its value describes that how much can investor gain as additional return in each day. According to the above table highest return is recorded on Friday as earlier cases. It is 6.155 excess from the average return per day. The second highest return on Thursday and then Wednesday. It also similar to the prewar period. As earlier there is a negative effect on both Tuesday and Monday. Similarly positive effect on Friday, Thursday and Wednesday and Negative effect on Monday and Tuesday.

When considering the significance of this each day it can observe that Friday effect is significant at 1% level, then Thursday effect is significant at 5% level. Other than that no any day depicts a significance impact on the return.

Therefore we can conclude that after the war period the day of the week effect is remain unchanged. According to the analysis of overall model at the very beginning next to that in two scenarios of prior to war and post war periods we observed the same day effect as Monday and Tuesday negative abnormal return and Friday, Thursday and Wednesday

Conversely Monday and Tuesday record inferior return compared to the average return per day. Monday return is lesser than the average return by -1.273. And Tuesday from -2.361 respectively. Addition to that Monday effect is insignificance because it is not significant at 1%, 5% or at least 10% level. Tuesday also same.

According to the information given by the above table it can conclude that the uppermost return is on Friday. Contrariwise most adverse effect is on Monday. Therefore these results emphasize that Day of the week effect is exists in the Colombo Stock exchange.

Consistent with the objective of this research to analyses the abnormal return due to day of the week effect the selected sample period has been divided into two parts as below;

- I. Prior war period (1st January 2004 to 19th May 2009)
- II. Post war period (20th May 2009 to 31stDecember 2013)

**Table 2: Pre War Table**

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Monday	-1.284	256	.200	-.11640	-.2950	.0622
Tuesday	-1.380	258	.169	-.12661	-.3073	.0540
Wednesday	1.557	258	.121	.10879	-.0288	.2464
Thursday	2.291	257	.023	.16973	.0238	.3156
Friday	3.611	250	.000	.24504	.1114	.3787

According to the results depict in above table, it is obvious that Friday abnormal return is greater than any of other days. Since compared to the average return per day during this period it records the highest excess amount of abnormal gain (3.611). It is significant at 1 % level as well. The second highest return of the whole week is noticed on Thursday. On Wednesday also there is an abnormal return compared to the average return per day but lesser than the returns on Friday and Tuesday. As same as the previous evaluation, Monday and Tuesday are the days that delivers the lowest return in whole week. When analyzing the significance of this each day effect it could be determined under 99% confidence that Friday effect is only the effect that makes the significant weight towards the return at 1% level. And Thursday effect is significant at 5% significance level. Thus there is a significance impact from Thursday towards the share return. But not much as Friday. Results rest on the other days shows that impact of these days are not significant at least 5% level. Therefore there is no significant impact from Monday, Tuesday and Wednesday towards the return. The results in above table further demonstrates that Friday and Thursday is records abnormal returns at 1% and 5% significant levels respectively. But Monday and Tuesday abnormal returns are not