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DEPARTMENT OF BUSINESS MANAGEMENT  
FACULTY OF BUSINESS STUDIES AND FINANCE  
WAYAMBA UNIVERSITY OF SRI LANKA  
KULIYAPITIYA  
SRI LANKA

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## Wayamba Journal of Management

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## **The Stability of Money Demand Function in Sri Lanka: A Bound Cointegration Approach**

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### **Abstract**

The importance of demand for money has become a prominent research topic in monetary economics due to its role in monetary policy formulation. This paper investigates empirically the determinants of money demand function in Sri Lanka over the period 1977-2019. This study estimates both short run and long run money demand function using monetary aggregates M1 and M2 based on time series data. The explanatory variables used in the study comprised with stability variables such as Inflation rate, exchange rate and Gross Domestic product, Opportunity cost variables such as short run interest rate and long term interest rate and other macroeconomic variables such as government expenditure, interest rate spread and economic crisis. Annual time series data has been taken to estimate determinants of money demand. The estimates of the long run relationship is obtained by using bound cointegration technique and the vector error correction technique was used to estimate of the short run dynamics of the long run equation. Findings of the study confirmed real GDP, interest rate, government expenditure, inflation rate, interest rate spread and economic crisis has significant relationship with the money demand in Sri Lanka. According to the stability test, the empirical results show that the both M1 and M2 money demand functions are stable for the period 1977-2019. Results indicate that both M1 and M2 are suitable for the monetary policy formulation. Thus, Sri Lanka's current practice of monetary targeting framework using broad money as an intermediate target is viable. This study provides the policy challenges that Sri Lankan economy meets to develop favorable macroeconomic environment in order to manage money demand for a sustainable growth.

**Keyword:-** Money Demand, ARDL Model, Stability Tests, Sri Lank.

## 1. INTRODUCTION

The liquidity preference or demand for money is the most vital and crucial major macroeconomic variable in determining economic and financial sector development in any country (Tan, 1997; Goldfeld, 1994). The money demand function of an economy reflects an overview on which ways and means economic agents fulfill their liquidity requirements. Thus, it is one of the key components in formulating effective monetary policy. Under the monetary Law Act, the central bank of Sri Lanka as the apex institution in the financial system has the sole authority to design and implement appropriate monetary policy with a view to achieving price stability and the financial system stability and thereby promote economic growth and development. Therefore, in the monetary policy formulation the estimation of money demand function cannot be underestimated. Moreover, the stable money demand function and robust determinants of money demand is a pre requisite to achieve the macroeconomic objectives through effective monetary policy (Kontolemis 2002; Abbas and Muhammad 2003; Umbreen et al., 2016; Manamba, 2017).

In economic theory specified the importance of estimating money demand in the policy formulation process. For an instance in the

famous macroeconomic model of IS-LM identified money demand as the main predictor of the effectiveness of the monetary policy in which income elasticity of money demand and interest elasticity of money demand are predominant in the money demand function. Further, stable money demand function helps policy makers to understand the behavior of monetary transmission mechanism (Nandasiri et al., 2015). This clearly indicates the monetary influences are transmitted to other sectors of the economy such as financial and goods market. Hence, the effectiveness of the monetary policy highly depends on the nature of the determinants of money demand and the stability of the money demand function in the long run.

According to the Friedman (1956) quantity theory of money, expresses money demand as a function of income and the cost of holding money. The development of monetarism has paved attention to the role of money in economic growth. Hence, there are large number of empirical research done on the determinants and stability of money demand function in both developed and developing countries (Simmons, 1992, Hayo, 1999, Sriram, 2000). However, until recently, there were limited researches on money demand estimation in the context of Sri Lankan economy (Weliwita and Ekanayake 1998; Dharmadasa, and Nakanishi 2013; Nandasiri et

al., 2015). Most of the above studies identified narrow money demand is more stable than the broad money demand in Sri Lanka. But, later few studies confirmed broad money demand is more stable in Sri Lanka over time (Adikari, 2015; Nandasiri et al., 2015; Jegajeevan, 2015). Thus, the available literature provide inconclusive outcome about the stability of money demand function in Sri Lanka. Hence, the purpose of this study is to investigate the main determinants of demand for money in Sri Lanka while testing the stability of the money demand function over the study period of 1977 to 2019.

The money demand refers to the aggregate form represents total demand for money by the public in spendable form. The stability of the money demand function varies with the stage of development of the financial sector (Tan 1997). At the early stages of development, it is typical for an economy to achieve a downward trend in money velocity with the growing degree of monetization in the economy however, when financial sector becomes complex with its development reversal could be seen in the money velocity with respect to the financial innovations making choice between money and non-money which explain other form of financial instruments. Hence, the variation in the velocity with respect to the stage of development of the financial

market would cause to undermine the stability of the money demand function. In Sri Lanka, financial sector development is remarkable with the introduction of the liberalization policies after 1977. The technological advancement and the development of communication systems has altered the financial products, financial services, markets and payment and settlements systems in Sri Lanka proving that the financial sector as the most innovative sector in the economy. Thus, financial innovations have dramatically changed the nature of the financial products make available and trade related activities generate instability in the money demand function in Sri Lanka. However, comparison to other Asian countries financial market in Sri Lanka especially money market and forex market are somewhat lagged behind mainly due to shortage of liquidity and low level of financial depth (Dharmadasa et al., 2013). Further the pressure on financial market further exaggerated due to heavy government intervention in the financial market. For an instance, government borrowing from the financial market was 34 per cent to finance the fiscal deficit in the year 2017 in which 26 percent represent borrowing from banking sector (CBSL 2018). The monetization of the economy which represents M1 and M2 as a percentage of GDP is stood at 6% and 46% respectively (CBSL, 2019). Thus, the purpose of this study is to examine the vital



determinants of the money demand function and assess the stability of the money demand function over the study period in Sri Lanka. In order to achieve above objectives, this study concerns on following to research questions, firstly, what are the determinants of money demand function in Sri Lanka? Secondly, is the money demand function stable over the time?

The present study differs from the existing literature in this area several ways. In economic literature, dearth of studies is available to examine the determinants of money demand function in Sri Lanka. The current study has been undertaken with the motivation of fill this gap as a first instance in the Sri Lankan context. Secondly, the inclusion of both broad and narrow money balances as a proxy for money demand brought forward new focal area of money demand function. Thirdly, this study uses interest rate spread as a financial development indicator which affect to money demand in Sri Lanka an important issue which has been not investigated by previous scholars. Inclusion of interest rate spread and exchange rate provide an important determinant of money demand in the phase of financial liberalization policies adopted during the study period.

The analytical process of the current paper comprises with following steps. After checking stationary properties of variables,

the long run money demand function is estimated based on cointegration approach with error correction model using annual time series data for the narrow money demand and broad money demand separately. The later explains the general to specific approach of money demand and its determinants. It is envisaged that useful policy implications can be derived from this investigations as money demand represent an important channel of monetary policy transmission mechanism. This study comprises with five sections. Section one is the introduction part identified the background information relation to issue with its objectives significance. Section two summarizes the literature review. Section three explains the data sources and technical root of the study including the methodology. Section four deals with the empirical results and final section summarizes the conclusion of the study.

## **2. LITERATURE REVIEW**

The importance of money demand function has become popular topic among economists, policy makers in recent years. There has been extensive research on the demand for money, however key focus of those studies are varied in accordance with time span, choice of variable selection and motives of money demand across developed and developing nations (Hoffman et al., 1995; Weliwita and Ekanayaka 1998;

Dharmadasa and Nikanishi 2013; Melih 2014). This is due to the fact that empirical estimation of money demand function is important for the policy makers to ensure the effectiveness of the monetary policy. Moreover, in the rapid pace of financial sector development, the role and effectiveness of money and monetary development become one of the most important focal areas in the monetary agenda.

The demand for money in the literature can be classified as the traditional view and the modern view. The traditional view as specified in the theoretical literature identified money demand function as a function of real income, interest rate and wealth. Modern approach identified number of other factors such as Inflation, Exchange rate, Budget deficit, population, oil price etc. as the determinants of money demand. These important factors are identified in the broad base literature covering on the developed and developing economies.

## **2.1 Theoretical Literature on Money Demand**

In the evolution of economic thought in Fisher (1911) invented the quantity theory of money from the classical school. Quantity theory of money demand identified income as the only determinant of money demand in naïve form expression of  $MV=PT$  explanation. Later on Marshall (1923) and Pigou

(1917) presented Cambridge Cash balance approach and concentrate on individual demand for cash balances based on income. Classical theory believes people demand money for transaction purposes as the theory mainly concentrated on neutral role of money in determining output and employment.

In the Keynesian School, Keynes (1936) in his General Theory composite money demand function which is based on three motives namely, transaction demand for money, precautionary demand for money and speculative demand for money. The unique contribution made by the Keynes in his liquidity Preference theory to the money demand function is identification of speculative demand for money which depends on interest rate.

Later on the Portfolio theories of money demand identified the store value function of money where people would like to hold money as a part of portfolio assets. The Monetary school led by Friedman (1956) and Tobin (1958) initiated the portfolio theories of money demand. The development of monetarist's ideas paved the attention to importance of money in determining output and employment. The inventory theories of money demand primarily focused on money as used for the purpose of transaction. Keynes advocated that the transaction demand for money was primarily depends on

income and it does not depend on interest rate. However, Baumol (1952) analyzed the interest elasticity of transaction demand for money on the basis of inventory theoretical approach. Further, Tobin (1956) invented alternative liquidity theory which explains liquidity preference as behavior towards risk. Both, Baumol (1952) and Tobin (1956) laid foundation to the inventory theory approach.

## **2.2 Empirical Literature on Determinants of Money Demand**

Numerous studies attempted to estimate short run and long run relationships between money demand and its determinants in different countries applying different theoretical and methodological approaches. In this section, some of these studies are summarized in terms of their methodologies and findings. A considerable body of literature has examined the money demand function in developing countries (Rabindra and Nirash, 2020; Adikari, A., 2015; Sarwar et al., 2013; Barry and Sumner 2008; Abbas and Mohammad, 2003; Sriram, 2000; Weliwita and Ekanayaka, 1998). However, the studies so far done in the Sri Lankan context are limited in number using time series techniques. A review of the selected empirical studies on the determinants of money demand in Sri Lanka reveals varied results. Most of the previous

studies are based on quantitative analysis of the determinants of money demand in Sri Lanka. But, available studies examined factors related to short-run and long-run narrow money demand based on conventional theories, have not been adequately explored other factors which explained money demand with giving due attention on stability of money demand.

The empirical literature which focuses on the conventional theories identified income and interest rate as the most important determinants of money demand in developed as well as developing countries. The most of the studies identified positive association between real income and money demand confirming the theory (Rabindra and Nirash, 2020; Sarwar et al., 2013; Sriram, 2000; Weliwita and Ekanayaka, 1998). Therefore, present study uses real income as the major macroeconomic variable to determine the money demand function in Sri Lanka. Moving to the interest rate, most of the studies treated interest rate as the opportunity cost variable which exerts negative impact on money demand (Rabindra and Nirash, 2020; Umbreen et al., 2016; Bhatta, 2013; Arize and Nam 2012; Tang 2007). But, empirical literature confirmed positive association and negative as well between interest rate and money demand function allowing us to conclude that mix results between the said two variables (Narayan et al., 2009). Thus, in this study

interest rate has been taken as the one of the factor which could affect money demand function in Sri Lanka.

Umbreen et al., (2016) examined the set of macroeconomic variables such as interest rate, GDP per capita, exchange rate, fiscal deficit, urban and rural population as the explanatory factors in their model against the money demand function for Pakistan over the period from 1972-2013 using ARDL Bound Testing approach in order to test long run relation between money demand and its factors. And the short run dynamics of the long run model tested using Error correction model. The results show that real interest rate exerts significant and negative effect upon money demand in both long and short run in Pakistan. Moreover, test disclosed that exchange rate and rural population are leaving significant but negative effect on the demand for money. Further, both real GDP and fiscal deficit has insignificant factors in short run as well as long run.

Bhatta (2013) used Bound cointegration approach to examine long run stability of money demand function in Nepal over the period 1975-2009. The test results confirmed the long run cointegration relationship among demand for real money balances, real GDP and interest rate in case of both narrow and broad money supply. The stability test confirmed that both

narrow and broad money demand functions were stable in Nepal.

Anwar and Asghar 2012 examines the short run and long run stability of the money demand function in Pakistan using the variables real income, inflation rate and exchange rate by incorporating ARDL approach for the period 1975-2009. Findings of the study revealed that both M1 real money balance and M2 real money balance co-integrated with its determinants but, it has been reported that M2 real money balance is more stable than M1 money demand.

Sulaiman and Hala, (2011) investigate the money demand function in Sudan as a function of real income, inflation and exchange rate against Narrow money demand (M1) using cointegration and error correction model for period 1960-2010. The results confirmed the existence of positive relationship between monetary aggregates and level of income and exchange rate and interest rate negatively affect M1.

Akinsi (2003) investigated money demand function for Turkey using real money balances, real income and interest rate and exchange rate. Model framework developed by cointegration and error correction modeling. Results shows long run demand for real money balance depends on real income, interest rate on government securities and the exchange rate. Moreover, the study found that income elasticity

and interest elasticity is much weaker in the short run than in the long run, however exchange rate effect is prominent in the short run.

Tang (1997) investigated the money demand function during the liberalization period in Malaysia with a focus on the stability of the money demand functions in different forms of Mo, M1 and M2 monetary aggregates against real gross domestic product, interest rates and exchange rate movements using Johansen cointegration techniques from 1973Q1 to 1991Q4. The results confirmed the existence of long run relationship between money demand and its determinants in Malaysia in spite of the financial liberalization and innovations in the financial system. Further in their study income homogeneity assumption of money demand upheld in the long run in respect of Mo and M1 but not in respect of M2 due to the improvements in the financial infrastructure in the system.

In the Sri Lankan Context, studies which focused on the determinants of money demand were limited. The studies related to money demand function in early 1980's limited to identify the determinants of money demand. These studies examined the specific factors of money demand and failed to address important determinants of money demand for the formation of effective monetary policy

(Jayatissa 1984; Wijewardena 1985). However, in 1990's researchers realized the importance of analyzing the money demand in a full fledged money demand model. Accordingly, Weliwita and Ekanayaka (1998) examined the long run and short run dynamics of money demand function for Sri Lanka during the post liberalization period. This model is enriched with open economy macroeconomic model by incorporating foreign interest rate and real exchange rate as proxy variables for foreign trade and capital movements. The study revealed that M1 is co-integrated with real income, interest rate, short term foreign interest rate and real effective exchange rate whereas M2 was not. This led to the conclusion that monetary authority should consider narrow money definition of money for the liquidity management. Similar results obtained by Dharmadasa and Nakanishi (2013) and confirmed the above findings. However, Barry and Sumner (2008) questioned about the necessity of introducing foreign interest rate and exchange rate in money demand function.

Dharmarathna (2009) examined the long run demand for money and the short run dynamics of the long run money demand on M1, using quarterly data for 1978 Q1 to 2003 Q4. The findings of the study reveal that M1 is co-integrated with real income and the nominal interest rate. The study, further found that the one

year term-deposit rate of commercial banks was the best fit for the model used when compared to alternative interest rates such as the 3-month Treasury bill rate, the 12-month Treasury bill rate and the repo rate, implying that the 1-year term deposit rate is the opportunity cost of holding money.

Dharmadasa and Nakanishi (2013) examined the long run money demand function for Sri Lanka using ARDL method for the period 1978 to 2010. In this study, special attention was given to the effect of financial crisis on money demand function in Sri Lanka. Findings of the study revealed that M1 money demand function is highly cointegrated with the real income; real exchange rate and short term domestic and foreign interest rates confirming the previous findings of the Dharmarathna (2009). Further, study found that financial crisis have significant positive impact on money demand in the short run however; financial crisis did not show significance impact on money demand in the long run.

In conclusion of the theoretical and empirical literature, whole money demand function could be classified as traditional view and modern view of money demand. In the traditional view identified, scale variable (Income) and opportunity cost variables (interest rate and inflation rate) as basic determinants of money

demand whereas modern view identified other macroeconomic factors such as exchange rate, population, budget deficit, financial crisis, trade openness as important determinants of money demand.

### 3. METHODS

#### 3.1 General Model

In the theoretical literature money demand function, the basic model begins with the basic variables to represent scale variables (SV) which denote the economic activity and opportunity cost of holding money (OC). Thus real money balance (M/P) is a function of economic activity and opportunity cost of holding money. This relationship can be explained as,

$$M_t/P_t = f(SV_t, OC_t)$$

But, development of the literature on money demand identified many other factors as the determinants of money demand. These factors are broadly speaking coming under the uncertainty and risk factors which explained under the broad heading of macroeconomic variables. Thus this study identified those factors as other macroeconomic factors (OM) which explain money demand. Thus, the general model can be summarized as follows.

$$M_t/P_t = f(SV_t, OC_t, OM_t)$$

### 3.2 Selection of Variables

#### Scale Variable

There is a wide controversy among the researchers on the selection of appropriate variables under each of the above variables explained in the general model in terms of the nature of variable and the sign of the variable. Most studies commonly used income as the scale variable instead of wealth as it difficult to measure due to its complexity and lack of information available on particularly non-monetized economies (Tang, 2007). Most of the studies used real GDP as the proxy variable of income and identified positive association between real GDP and money demand (Rabindra and Nirash, 2020; Nwude et al., 2018; Nam 2012). According to the Keynesian theory when income increases money demand increased under transaction and precautionary motives. This income elasticity of money demand explains two functions of money, namely store value and medium of exchange. Thus there exists positive association between income and money demand. Thus, present study selected real GDP as the scale variable.

#### Opportunity Cost variable

Interest rate is the best indicator of the opportunity cost of holding money. As an important monetary policy instrument, assessing the impact of interest

rate on money demand is vital (Rabindra and Nirash, 2020). Then the question arise whether to use in more appropriate short run interest rate or long run interest rates. Some argue long run interest rate is more appropriate than short run rates since it more representative of the average rate of return on capital (Dharmarathna, 1999). Moreover, according to the Keynesian theory, long run interest rate is more appropriate since the portfolio investment decisions are negatively linked with long run rate of interest rates. Thus, present study uses, 3 months government Treasury bill rate and long run average commercial banks' lending rates as the opportunity cost variables against the money demand. The current study assumes that interest rate has a negative relationship on money demand function in Sri Lanka.

#### Other Macroeconomic Variables

The conventional theories of money demand do explain an important aspect of determinants of money demand in closed economic environment. Thus, more efforts have been given by researchers to identify other determinants of money demand (Foresti and Napolitano, 2013). Apart from the above major variables, present study uses set of macroeconomic variables based on the literature in order to identify the long run as well as short run determinants of money demand in Sri Lanka which

comes under country specific analysis. According to Hassan et al., (2016), money demand function is being affected by number of macroeconomic factors such as inflation, fiscal deficit, public debt, and oil price hikes debt etc. in addition to real income and interest rate, Azim et al., (2010) reported that inflation rate has positively related to money demand while exchange rate affects negatively on money demand. But, Sulaiman and Hala (2011) revealed the negative association between the inflation rate and exchange rate in Sudan. The negative nexus between inflation and money demand conformed people willingness to substitute physical assets to financial assets. This finding is further confirmed by Nandasiri et al., (2016).

In a flexible exchange rate system, Demand for money indeed depends on exchange rate apart from the income and interest rates. According to Arize and Nam (2012); Anwar and Asghar, (2012); Tang (1997) exchange rate is also considered as one of the significant factor which could affect to money demand in an open economic environment. The negative association between exchange rate and money demand confirmed by the theory where depreciation of exchange rate will lead to a decline in domestic currency (Nwude et al., 2018; Hussaini et al., 2018; Umbreen et al., 2016; Dharmadasa and Nakanishi, 2013; Anwar and

Asghar, (2012). According to them rise in exchange rate may result in holding of less demand for local currency and high demand for foreign currency leading to fall in demand for money. This study uses real exchange rate and assumed negative association between real exchange rate and money demand in Sri Lanka.

Fiscal deficit is also considered as an important macroeconomic determinant of money demand in the previous literature. Literature identified mixed results in relation to fiscal deficit and money demand. Vamvoukas, (1998); Umbreen et al., (2016) identified positive association between fiscal deficit and money demand supporting the Keynesian model. But, Deravi et al., (1990) argued that budget deficit has no independent impact on money demand supporting the classical ideas (Barro, 1981). According to the Classical economics demand side factors have no independent impact on real variables. This study uses government expenditure to GDP ratio as a proxy variable for the fiscal deficit and assumed positive association between government expenditure and money demand in Sri Lanka.

The economic and financial crisis create unstable economic environment in most of the countries during the last three decades. Thus, countries had to undergo tight economic controls in order to face the economic and



financial crisis. These tight economic situations directly affect to quantity of money holdings for different economic requirements. Thus, it is important to investigate the impact of economic crisis on money demand in Sri Lanka. In a study, Dharmadasa and Nakanishi (2013) found financial crisis have a positive significant impact on narrow money balance in the short run but not in the long run. As a result the model framework of the study is enriching by a dummy variable to represent economic crisis. Further, this study uses interest rate spread (interest margin) as a monetization indicator which comes under the macroeconomic environment.

This is an important indicator of efficiency level of the banking system. According to the theory, interest rate spread, which represents the cost of financial intermediation in a competitive environment, should fall as the level of financial intermediation increases. High interest margin is affecting both borrowers and savers, distorting both borrowing and saving decisions. Abbas and Mohammad, (2003) found demand for money negatively related to a rise in the interest rate spread based on the eight developing countries. This factor has not been investigated in the previous literature on the Sri Lankan context.

## Monetary Aggregates

The dependent variable, the demand for real money balances measured based on Narrow money (M1) and board money (M2) in real terms. Literature identified both M1 and M2 and a good predictor to measure the money demand and results are varied from country to country based on the country specific factors justifying the importance of country specific analysis in determining the stability of money demand function (Bhatta, 2013). The empirical studies which focused on the money demand in the Sri Lankan context identified M1 as the good predictor of money demand (Dharmadasa and Nakanishi 2013; Dharmarathna, 1999; Weliwita and Ekanayaka, 1998). But few studies later confirmed that money demand for M2 is more stable than M1 (Adikari 2015; Nandasiri et al., 2015).

### 3.3 Empirical Model for Money Demand Function

Following the general model for money demand the functional relationship for long term money demand function can be expressed as follows.

$$\ln (M_i/P_t) = \beta_0 + \beta_1 \ln \text{RGDP} + \beta_2 \ln \text{INTR} + \beta_3 \ln \text{RER} + \beta_4 \ln \text{INFR} + \beta_5 \ln \text{GEGDP} + \beta_6 \ln \text{INSP} + \beta_7 \ln \text{TBILL} + \beta_8 \text{EC}(d) + ut$$

Where  $\ln$ ; natural logarithm,  $M_i$ = narrow/broad money supply,  $P$ ; domestic price level proxied by Implicit price index,  $RGDP$ ; real income as a measure of scale variable proxied by real GDP,  $\beta_0$ = intercept term,  $INTR$ = interest rate as a measure of opportunity cost of money proxied by commercial bank weighted average lending rate,  $TBill$ : short run interest rate proxied by 91 treasury bill rate;  $INFR$ = inflation rate proxied by annual average percentage change in GDP Deflator;  $RER$  ; real exchange rate proxied by nominal exchange rate adjusted for price differentials between two countries USA and Sri Lanka,  $GEGDP$ ; government expenditure as a percentage of GDP,  $INSP$ ; interest rate spread proxied by commercial banks average 12 months deposits rate and average lending rates;  $EC(d)$ ; economic crisis proxied by a dummy variable (0,1) and  $U_t$  ; white error term;  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$  coefficients of the explanatory variables.

### 3.4 Data Sources and Analytical Procedure

This study employed time series data from 1977-2019. The coverage of the study with time series data spanning from 1977-2019 includes 43 annual data points ensuring the greater opportunity to extract the low frequency information and also use of such long period data points allows us to examine more systematically the question of the

stability of the money demand d function over time, a crucial issue in the literature and for the policy makers (Barry and Sumner 2008).

The relevant data was collected from the annual report of the Central bank of Sri Lanka and USA Inflation rate is calculated using the current Consumer Price Index published monthly by the Bureau of Labor Statistics (BLS). First the study checked the stationarity of data by using ADF test and PP test because if there are non-stationary data provides spurious regression. Unit root test is used to check whether the variables are in different order of integration to fit in ARDL method. To investigate the long run determinants of money demand, a bound cointegration test under Pesaran et al., (2001) procedure were used. If the value of F-statistic is more than the upper bound I (1) of critical value then study can be concluded that co-integration exists and long-run association is present. When all the variables are co-integrated the study can develop Vector Error Correction Model (VECM) to identify the short run dynamics of the long run model. System model identified the error correction term a value which corrects the disequilibrium of the system. The error correction term should have a negative sign and should be significant.

Table 1 Selection of Variable &amp; Definition

Name of the variable	Abbreviation	Data Source	Definition
Real GDP	RGDP	Central Bank Annual report	annual average real GDP (1996=100)
Long term Interest rate	INTR	Central Bank Annual report	Commercial Banks weighted average lending rate.
Short term interest rate	TBILLS	Central Bank Annual report	91 days Treasury Bill rates.
Inflation Rate	INFR	Central Bank Annual report	Annual average change in Implicit Price Index (1996=100)
Government Expenditure	GEGDP	Central Bank Annual report	Total government expenditure as a % of GDP
Real Exchange Rate	<i>RER</i>	Central Bank of Sri Lanka Annual report, Bureau of Labor Statistics (BLS) USA	Nominal exchange rate adjusted for price differentials between US & SL
Interest rate Spread	INSP	Central Bank Annual report	Rate of difference between commercial bank average savings deposits and average lending rates
Economic Crisis	EC	Central Bank Annual reports	Dummy variable : EC=1 indicate presence of economic crisis and EC=0 indicates absence of economic crisis
Real Narrow Money Balances	M1/P	Central Bank Annual reports	Narrow money supply (CC+DD) deflated by implicit price index
Real Broad Money balance	M2/P	Central Bank Annual reports	Broad money supply deflated by implicit price index

If the error correction term or speed of adjustment is negative sign and significant it confirms the existence of long term relationship between the variables in the money demand model. The study performs parameter instability test using the CUSUM test. This test is based on the cumulative sum of the recursive residuals. The CUSUM test plots the cumulative sum together with the 5% critical lines. The parameter instability is found if the cumulative sum goes outside the area between the two critical lines. Finally study used diagnostic testing to verify the goodness of the model. This test performs to check whether the variance of the residuals is homoscedastic or heteroscedasticity, the White Heteroscedasticity test is applied to the regression model. By using the Breusch-Godfrey Serial

Correlation LM Test, we check the existence of autocorrelation.

#### 4. RESULTS AND DISCUSSION

##### 4.1 Unit Root Test

The results of the ADF tests and PP tests are given in Table 2 and Appendix 1 at levels and first difference. According to the test results, the null hypothesis of a unit root at levels in most of the variables can be rejected at 5 percent level. In other words, results clearly show that most of the variables such as LTBILLS, LINTR, INFR, LGEGDP and LRER are stationary at levels except LM1, LM2, LRGDP, and INSP. Thus, the variables LTBILLS, LINTR, INFR, LGEGDP and LRER are in order of integration I(0) and LM1, LM2, LRGDP, INTSP are in order of integration I(1).

**Table2 Unit Root Test Results**

Variable	Model	Level (t-stat)	First Difference (t-stat)	Decision
LM1	Intercept	-1.2413	-7.5795***	I(1)
	Intercept and Trend	-1.3412	-7.5726***	
LM2	Intercept	-1.3084	-2.7382*	I(1)
	Intercept and Trend	-1.41600	-3.9499**	
LRGDP	Intercept	-0.0861	-5.5252***	I(1)
	Intercept and Trend	-1.4165	-5.4652***	
LTBILLS	Intercept	-2.4795	-6.5766***	I(0)
	Intercept and Trend	-3.7106***	-6.6196***	
LINTR	Intercept	-1.7897	-9.2439***	I(0)
	Intercept and Trend	-3.6036**	-9.3379***	

LINSR	Intercept	-1.788263	-5.359684***	I(1)
	Intercept and Trend	-2.178712	-5.651380***	
INFR	Intercept	- 4.330332***	-6.277614***	I(0)
	Intercept and Trend	- 5.021057***	-6.186215***	
LER	Intercept	-3.314886**	-13.41199***	I(0)
	Intercept and Trend	-4.850364**	-13.85359***	
LGEGDP	Intercept	-2.720341	-11.05752***	I(0)
	Intercept and Trend	- 7.145042***	-11.47614***	
FCR	Intercept	-2.8688	-4.8446**	I(1)
	Intercept and Trend	-2.8355	-4.7326**	

Note: \*, \*\* \*\*\* denotes significance at 10%, 5%, and 1% level respectively

That means there exists a mix order of integration with I(1) and I(0) variables in the money demand model. Thus, under these circumstances the most suitable method for estimation of long run dynamics is the Autoregressive Distributed Lag Model (ARDL) proposed by Peseran et al., (2001).

#### 4.2 Long Run Model

Given the results of stationary test, since all the variables are stationary the model is suitable

For long run analysis. Further, Inverse polynomial function of AR form depicts that the variables are stationary since all variables are lying within the circle (see Figure 1). Under these circumstances, regardless of the order of integration a bound testing can be applied to find out the long run model. As a first step of estimating long run model study examined the maximum lag length as reported in Table 3 based on lag length selection different criteria and established 3 lag lengths for LM1 and LM2.

Inverse Roots of AR Characteristic Polynomial

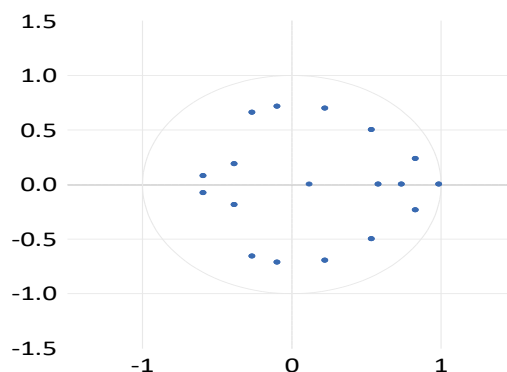


Figure 1: Inverse Roots of AR Characteristic Polynomial

Table 3 : VAR Lag Order Selection Criteria

Variable	M1						M2					
	LogL	LR	FPE	AIC	SC	HQ	LogL	LR	FPE	AIC	SC	HQ
0	116.9	NA	3.6	-5.3	-5.0	-5.2	-6.9	NA	1.7	0.7	1.1	0.9
1	384.3	401.1*	3.6	-14.7	10.9*	-13.3	290.9	446.8*	3.8	-10.1	-6.2*	-8.6
2	477.2	97.5	3.8	-15.3	-8.1	-12.7	389.7	102.9	3.1	-10.9	-3.6	-8.2
3	643.3	99.6	5.2*	-19.5*	-8.9	15.7*	554.2	99.1	4.4*	-	-4.4	-

\* indicates lag order selected by the criterion; LR: sequential modified LR test statistic (each test at 5% level); FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion

Source: Authors Calculations based on Survey Data

#### ARDL Bound Test Estimates

This study uses the bound testing approach developed by Pesaran et al., (2001) to estimate the long run relationship among the variables selected under the two models of narrow money balance and broad money balance. In particular, the analysis of the study investigates whether the signs of the estimated coefficients are in line with their predicted

values and whether these estimates are statically significant. Table 4 summarizes the estimated results of F tests for the level of significance. The results revealed that F statistics is greater than the upper bound critical values for both LM1 and LM2. The calculated critical values clearly exceed the table values at 10%, 5% and 1% level of significance. Thus, F statistics clearly reject the null hypothesis

of no cointegration. It reflects that there exists cointegration or the long run relationship among the variables selected in the two models. Once, the models are confirmed the long term relationship between money

demand and its determinants, next step in the ARDL approach is to determine the short run and long run coefficients in the money demand model for Sri Lanka.

**Table 4 : ARDL Bound Test Estimates**

Dependent variable	LOS	Bound Critical Values		Test Statistics
		Lower	Upper	
LM1		Lower	Upper	Lag: 2,3,3,3,0,3,1,0
	1%	2.73	3.90	F-stat: 5.805
	5%	2.17	3.21	K:7
	10%	1.92	2.89	
LM2	1%	2.50	3.68	Lag: 2,3,1,2,3,3,3,2,2,1
	5%	2.04	2.08	F-Stat: 13.172
	10%	1.80	2.80	K:9

Source: Author Estimations

The results of the long run cointegration coefficients are reported in the Table 5. According to long run model 1, it can be concluded that LRGDP, INFR, LEXR, LINSP and LGEGDP have statistically significant but LTBILL and LRER have no significant relationship with LM1. Among the significant variables, LRGDP has positive impact on money demand whereas LINTR, INFR and EC have negative impact on money

demand. Moreover, LINSP and LGEGDP have weak positive impact on narrow money balances in the long run.

Referring to model 2, reported that LRGDP, LGEGDP has significant positive impact on money demand and LINTR, LTBILL and INFR have negative significant impact on broad money balances in the long run. But, LINSP and LRER have no significant relationship with long term real money balances. These

results provide strong support for the theoretical predictions regarding the impact of real

income, interest rate and inflation rate on money demand function.

**Table 5: Long run Money Demand Model for Sri Lanka**

Dependent Variable	Explanatory Variable	Coefficient	St. error	t-Stat	Prob.
Model 1- LM1	LRGDP	1.222	0.256	4.766	0.000
	LTBILL	0.516	0.306	1.688	0.106
	LINTR	-0.582	0.338	-1.722	0.013
	LINSP	1.689	0.895	1.887	0.072
	INFR	- 0.099	0.048	-2.031	0.055
	LRER	0.057	0.296	0.193	0.848
	LGEGDP	0.906	0.443	2.045	0.056
	FCR	-0.416	0.167	2.475	0.021
	C	-20.404	15.618	-1.306	0.205
Model 2- LM2	LRGDP	1.663	0.696	2.389	0.026
	LTBILL	-0.383	0.152	-2.513	0.027
	LINSP	0.253	0.312	0.811	0.433
	INFR	-0.063	0.027	-2.303	0.040
	LINTR	-0.576	0.083	-6.856	0.000
	LRER	-0.085	0.126	-0.669	0.516
	LGEGDP	0.499	0.152	3.284	0.006
	FCR	-0.117	0.064	-1.806	0.096
	C	-39.246	13.909	-2.821	0.154

Source: Author Estimation



### 4.3 Short Run Dynamics of the Models

Given that the above mentioned variables are cointegrated, the next step is to estimate the Vector Error Correction Estimates (VECM) to find out the short run dynamics of the long run model. A summary of the VECM representation of the ARDL selected models are presented in Table 6 below. Each error correction equation includes the error correction coefficient, error correction term, current and first lag values of variables of the first difference of each term lagged once ( $t-1$ ) variable were reported. All coefficients in the ECM are predicted values with lags are true anti forecasts. The error correction term reflects how quickly the deviation of each variable from the long run equilibrium is corrected gradually towards the equilibrium level through a series of partial short run adjustments. In other words the error correction term expresses the speed of adjustment to restore equilibrium in the dynamic model. Further, in order to confirm the long run relationship, the error correction term should be negative and statistically significant. ECM results shows that most of explanatory variables become significant in the short run broad money demand function except the 91 Treasury bill rates. The short run results of the model 1 and 2 are presented in Table 6. According to the results positive and significant short run

relationship between narrow money balances (M1), real GDP and interest rate spread has been observed. Further negative and significant relationship between M1, long run interest rate, real exchange rate and government expenditure as a percentage of GDP has been observed. Turning to model 2 indicates that positive and significant relationship between M2, real GDP, government expenditure, interest rate spread and financial crisis has been observed. Further, negative relationship between M2, first lag of M2, interest rate, inflation rate and real exchange rate has been observed. Whereas, both inflation rate and 91 days TBILL rates are found as insignificant factors in the short run narrow money demand function and broad money balance respectively. Thus, generally, real GDP, interest rate, real exchange rates, interest rate spread and government expenditure can be identified as the major determinants of short run money demand function in Sri Lanka. Estimated error coefficient (EC) is statistically significant at 1% and negative sign in both cases indicating long run relationship between money demand and its determinants. In the first model, the EC term is greater than 1, and it is 1.0294 implies that deviations from the long term growth rate is corrected by the following year by 1.03%. But, in the second model, there is a weaker speed of adjustment to correct the equilibrium in the dynamic model (i.e 0.18%).

After discussing the short run coefficient, stability of the money demand function is tested during the period 1977-2019.

#### 4.4 Stability Tests

Parameter constancy is a critical issue for money demand function. In order to test the stability of the money demand function, study employed the methodology of cumulative sum (CUSUM) and

the cumulative sum of squares (CUSUMSQ) tests proposed by Brown et al., (1975). As shown in the Figure 2 and 3, neither the CUSUM nor CUSUMSQ plots cross the 5% critical lines, thus study can conclude that the estimated parameters for the short run and long run real M1 and M2 demand functions in Sri Lanka are stable.

**Table 6 : Error Correction Model Regression Results**

Variable	Model 1		Model 2	
	Selected model: 1,1,1,2,2,3,0,2,0		Selected model:	
	Coefficient	t-ratio	Coefficient	t-ratio
D(LM2(-1))			-0.4432	-5.0268***
D(LRGDP)	3.8406	3.9650***	0.3011	3.9208**
D(INFR)	-0.0259	-1.5893	-0.0062	-8.4661***
D(LGEGDP)	0.8098	1.0200	-0.2535	-6.5003***
D(LGEGDP(-1))	-2.5622	-4.2363***	0.3339	9.3511***
D(LINSP)	1.2994	2.2380**	-0.0040	-0.1526
D(LINSP(-1))	1.4481	3.1138**	0.1086	4.4846**
D(LRER)	-0.0322	-0.4431	-0.0194	-4.7999**
D(LRER(-1))	-0.2823	-2.7987**	-0.0191	-3.6035**
D(LINTR)	-2.4509	-2.8252**	-0.0769	-1.8510*
D(LINTR(-1))	-1.9711	-3.2086**	-0.3111	-7.6372***
D(FCR)			0.0221	3.8577**

D(FCR(-1))			0.040	6.2399***
D(LTBILL)			-0.0131	-1.1130
ECM term(-1)	-1.0294	-9.1066***	-0.1833	-15.1828*** *

Note: \*,\*\* \*\*\* denotes significance at 10%, 5%, and 1% level respectively

Source: Author Estimation

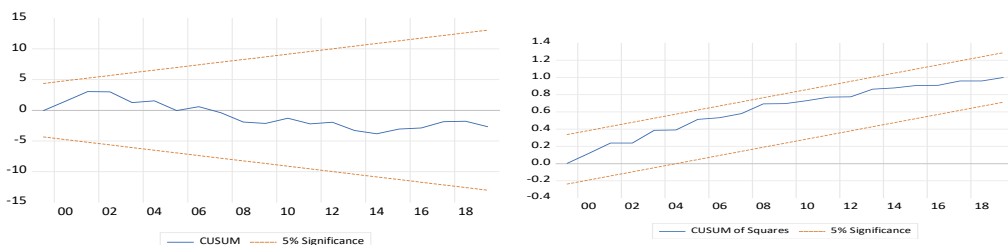


Figure 2: Stability Tests for M1

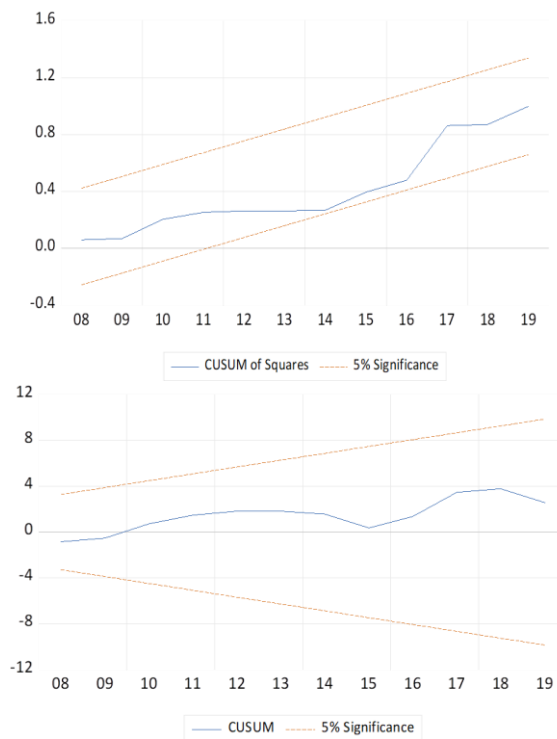


Figure 3: Stability Test for M2

#### 4.5 Diagnostics Tests

Several diagnostic test namely, serial correlation test, heteroscedasticity test and normality tests were performed. A detailed description of diagnostic tests is shown in Table 7. First, serial correlation tests were tested. Serial correlation determines how well the past values of a variable predict the future value of the same variable. Test results confirmed at 5 per cent significance level, it fails to reject the hypothesis that there is no serial correlation issue in variables.

Secondly, heteroscedasticity tests were performed. Since the p value of Chi-Square is not less than 0.05, it does not reject  $H_0$ , which means that there is no heteroskedasticity. According to the normality test of residuals, since p-value is greater than 0.05, we do not reject  $H_0$  at 5 per cent level of significance and it can be concluded that residual are normally distributed.

Several significant findings have been discovered from this analysis. As shown in Table 5, model 1 and 2, real GDP and long term interest rate has strong significant relationship with money demand in the long run. As expected, the coefficient of real income (LRGDP) is positive and is highly significant.

**Table 7: Diagnostic Test**

<b>Model1</b>	<b>M1</b>		
Test	Test Stat.	Test Result	Prob.
Normality	Jarque-Bera	4.268	0.118
Serial Correlations	LM Test	2.217	0.329
Heteroscedasticity	B.P Godfrey	23.673	0.209
<b>Model2</b>	<b>M2</b>		
Normality (residual)	Jarque-Bera	0.933	0.627
Serial Correlations	LM Test	3.866	0.145
Heteroscedasticity	B.P Godfrey	32.612	0.210

Source: Authors Estimation

This finding is in line with the many studies done in the domestic and foreign countries and it confirmed the theoretical predictions (Nwude et al., (2018); Manamba, (2017); Anwar and Asghar 2012; Adikari 2015; Jegajeevan, (2015); Nandasiri et al., 2015; Khan, 1992). However, these findings are completely opposed to the previous findings established the notion that broad money is co-integrated with neither real income nor interest rate (Weliwita and Ekanayaka 1998; Dharmarathna, 1998). The positive income elasticity of

money demand confirmed the importance of money under transaction and precautionary motives. This shows rapid monetization of the economy over the study period. Moreover, relatively large income elasticity of money demand is not uncommon in developing countries (Chowdhury, 1997). The more than unity elasticity of demand implies that increase in income leads to a higher increase in money demand which may create inflationary pressure in the economy. This situation can be endorsed by negative impact of inflation on money demand (Sulaiman and Hala 2011).

As shown in table 5, both 91 Treasury bill rate (LTBILL) and commercial banks average lending rate (LINTR) have long run impact on money demand. Interest rate has significant negative impact on money demand confirming the expected sign and previous literature (Nwude et al., (2018); Manamba, (2017); Anwar and Asghar 2012; Arize and Nam, 2012; Adikari 2015; Nandasiri et al., 2015). The 91 Treasury bill rates which is a short run interest rate have a negative and significant impact on broad money balance but not for narrow money balance. This finding is in line with the Dharmarathna (2009) in which long run interest rates were identified as a good predictor of explaining of money demand. Thus, this confirmed that commercial bank average lending rate as good proxy of the

opportunity cost of holding money in Sri Lanka. Apart from the long run interest rates, short run interest rate (TBILL rate) is also important as TBILL rate has significant negative impact on broad money balance in the second model and confirmed by the Jegajeevan, (2015). This is due to the fact that savers and investors are highly worried on short run rates when they are making financial decisions under risk and uncertain environment. Similarly, INFR appeared as an important factor which determined M1 in the long run. INFR has negatively impact on both M1 and M2. This finding is in consonance with Nwude et al., (2018). For an instance, when INFR increases by 1% the demand for real narrow money balance decreases by 0.09% per annum. It means that when inflation goes up people are willing to substitute money for real assets than the financial assets. In the previous discussions, few studies suggested inflation rate in place of interest rate as a good proxy for money demand. Thus, apart from the interest rate inflation rate can be considered as opportunity cost variable.

Interest rate spread has a positive effect on money demand in the short run as well as in the long run for narrow money demand. It contradicts the findings of Abbas and Muhammad, (2003).

Government expenditure as a percentage of GDP has positive

significant effect on money demand in the long run. According to the Keynesian theory expansionary fiscal policy actions may lead to increase the money demand (Vamvoukas, 1998; Umbreen et al., 2016).

Comparison of two models, clearly indicate that real exchange rate is not significant in explaining the money demand in the long run but in the short run the influence of exchange rate on money demand is significant and the sign of the coefficient was negative. This is confirmed by the studies done by Bahmani, (2011); Akinsi, (2003) and Bahmani-Oskooee and Malixi (1991). Depreciation of domestic currency in terms of foreign currency may lead to reduce the demand for holding local currency and high preference for holding foreign currency leads to reduce the demand for money. Referring to dummy variable introduced in the model shows that economic crisis has weak negative relationship in explaining money demand function in Sri Lanka. This means that financial crisis may have negative impact on money demand in Sri Lanka. The reason for the negative impact claimed that impact of financial crisis was mainly to the export sector in Sri Lanka. It affected to the trade account and hence exchange rate may depreciate. But, in the short run dynamics of the model indicated that financial crisis has significant positive impact on money demand confirming

previous literature by Dharmadasa and Nakanishi (2013). Generally, real GDP, interest rate, inflation rate government expenditure and financial crisis can be identified as the major determinants of long run money demand in Sri Lanka.

## 5. CONCLUSION

This research was undertaken with a view to examining the stability of the money demand function in Sri Lanka over the period 1977-2019. The model frame work of the study was developed based on the deductive approach based on the empirical literature. The model developed on real money balance for M1 and M2 as dependent variable against the explanatory variables such as, real GDP, commercial bank average lending rate, 91 TBILL rates, inflation rate, real exchange rate, government expenditure, interest rate spread and economic crisis. These explanatory variables were conceptualized under scale variables; opportunity costs variables and other macroeconomic variables. The data analysis was based on the famous bound cointegration approach and Vector Error correction approach.

The results revealed that most of the variables are cointegrated and have long run relationship with money demand except short run TBill rates, real exchange rates and interest rate spread. The interest rates, inflation rates and

economic crisis exert negative and significant effect on money demand in the long run. Further, real GDP and government expenditure exert positive significant effect on money demand in the long run. It is found that depending on the VECM model, variables such as real GDP, interest rate, real exchange rate, interest rate spread, government expenditure, and economic crisis were significant in explaining the money demand function in Sri Lanka. Thus, in the short run real GDP, financial crisis and interest rate spread exert positive significant effect on money demand in Sri Lanka whereas real exchange rates and interest rates exert negative impact on money demand.

Consistent with theoretical postulates, this paper finds that the demand for money positively responds to an increase in real GDP, interest rate spread and government expenditure to GDP and negatively to a rise in the interest, the rate of inflation and the economic crisis. The money demand function is found stable over time indicating both M1 and M2 are suitable for monetary policy formulation in Sri Lanka. These are the good predictors of the long run money demand. External stability factors namely real exchange rate may have a negative impact on money demand in the short run and but long run is insignificant. Further, economic crisis exert negative impact on broader money

balances in the short run and also negative effect on money demand in the longer term as well. However, further empirical investigations are necessary in this regard. Thus, monetary authority should consider these effects of the external factors in formulating appropriate monetary policies. Finally, findings of the study provide the policy challenges that Sri Lankan economy meets to develop favorable macroeconomic environment in order to manage money demand for a sustainable growth.

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**Appendix 1: Unit Root Test Results (PP Test)**

Variable	Model	Level (t-stat)	First Difference (t-stat)	Decision
LM1	Intercept	-1.5891	-23.3635***	I(1)
	Intercept and Trend	-3.2562	-23.4525***	
LM2	Intercept	-0.0886	-4.9332***	I(1)
	Intercept and Trend	-1.8783	-4.9091***	
LRGDP	Intercept	-0.1066	-5.5295***	I(1)
	Intercept and Trend	-1.6803	-5.4685***	
LTBILLS	Intercept	-3.2687**	-8.7032***	I(0)
	Intercept and Trend	-3.9299**	-6.6196***	
LINTR	Intercept	-3.7847**	-9.6729***	I(0)
	Intercept and Trend	-4.6864**	-9.6929***	
LINSR	Intercept	-4.4995**	-14.8209***	I(0)
	Intercept and Trend	-4.3923**	-25.9784***	
INFR	Intercept	-4.5996**	-29.7578**	I(0)
	Intercept and Trend	-5.8731**	-28.2890***	
LER	Intercept	-4.5951***	-22.2173***	I(0)
	Intercept and Trend	-8.6152***	-25.9552***	
LGEGDP	Intercept	-1.2750	-24.1556***	I(0)
	Intercept and Trend	-8.6502***	-23.2898***	
FCR	Intercept	-2.9953**	-5.7918***	I(0)
	Intercept and Trend	-2.9668	-5.6894**	

Note: \*, \*\* \*\*\* denotes significance at 10%, 5%, and 1% level respectively  
 Source: Author Calculations

## The Role of Individual Cultural Values in Personal Innovativeness

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### Abstract

According to the Innovation Diffusion Theory, personal innovativeness is a key component to an individual's decision-making process. Theoretically, however, it does not very clearly describe the role of cultural values in personal innovativeness. If culture influences individuals' traits, it is necessary to discuss in depth about this relationship, as personal innovativeness a trait. This article, therefore, justifies the importance of further discussing the contribution of cultural values to personal innovativeness using the theory of innovation diffusion. A systematic literature review was conducted for this qualitative analysis, and relevant theories and models were identified to elaborate on the key precursors and concerns identified with existing knowledge. A conceptual map was developed with existing knowledge that expands the knowledge gap for current research.

**Keywords:-** Personal Innovativeness, Individual Cultural Values, Innovation Decision Process, Innovation Diffusion Theory.

### 1. INTRODUCTION

Personal Innovativeness (PI) is defined as a key priority that affects a person when deciding to adopt any new product or service. Depending on how long it takes a person to use a product or service, he or she can be classified into PI levels. The rapport between PI and a persons' decision process is discussed in depth in Rogers' (1971) Innovation Diffusion

Theory (IDT). Research also identifies PI as a personality trait. According to trait theories, culture influences every trait. Therefore, when it comes to PI, it is clear that it has a cultural influence because it is a trait. Thus, this article does not attempt to measure the relationship between culture and PI. Instead, the focus of this article is to delve deeper into how culture partakes on PI, in what way, and what is the role of culture on PI and the

decision process. Because culture is a broad area, this study is focused on cultural values identified as an implication of culture. Hence, the focus is on cultural values to further narrow the study theme. In fact, it may be broad and not practical to consider all those cultural values, as there are many cultural values discussed in the literature.

It is therefore based on four cultural values (Individualism/collectivism, Power distance, Uncertainty avoidance and Masculinity/femininity) that are widely discussed in the literature and have strong theoretical basis (Kluckhohn & Stordtbeck, 1961; Schwartz, 1999; Smith, Dugan & Trompenaars, 1996; Triandis, 2001; Hui & Triandis, 1986; Markus & Kitayama, 1991; Hofstede & Bond, 1984; Hooi, 2007; Mooij & Hofstede, 2011; Mooij & Hofstede, 2010; Hofstede, 1983; Wu, 2006; Orr & Hauser, 2008; Hofstede, 2011; Carl, Gupta & Javindan, 2004; Daniels & Greguras, 2014; Luque & Javindan, 2004; Emrich, Denmark & Hartog, 2004). This is because there is a dearth of studies in understanding these four values (as individual values) through PI. For future studies, one can study how other cultural values and cultural implications contribute to PI. This is because PI is not just a persons' motivational stimulus (Lu et al., 2005). There, any innovation that is not accepted by its' prospective user will not benefit the seller.

Therefore, understanding PI in various domains will help innovators to identify the exact needs of the market, and to pitch it with their innovative ideas (Lu et al., 2005). In addition, a person's PI determines when and how to adopt. Therefore, when promoting a product, marketers must have a deep understanding of people's PIs, in determining the target audience for their product promotion campaigns (Lu et al., 2005; Lu, 2014). Therefore, understanding the role of ICV in PI will broaden the overall knowledge of PI from a cultural perspective.

## **2. THEORETICAL BACKGROUND**

### **2.1. Personal innovativeness and technology adoption:**

When it comes to adopting new products/services, technology adoption takes precedence. That is because innovativeness (IN) is often intertwined with technology. The two popular theories that discuss technology adoption are the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). As it is most explained, TAM primarily focuses on Usefulness and Ease of Use; two separate beliefs and their influence on attitude and behaviour. There are different TAM model versions, though none of the new versions considers PI as a variable in their models (Lu et al., 2005; Agarwal

& Prasad, 1998). Also, in UTAUT, variables such as performance expectancy, effort expectancy, social influence, and facilitating conditions have been considered as the main determinants of behavioural intention/behaviour, and there are four moderating variables such as gender, age, experience, and voluntariness use. However, it was observed that, UTAUT also did not consider PI in their original model (Venkatesh et al., 2003; Xu & Gupta, 2009).

Accordingly, attention was drawn to IDT as none of the above theories discussed the concept of PI. Accordingly, regarding the individual IN categories, the IDT is very clearly described. It explains that the individuals separated into adopter categories are based on their level of PI.

Thus, IDT elaborates PI as a prior condition for the consumer's decision process. There, the consumer's decision process was referred to as the process of innovation decision. It explains that the Innovation Decision Process (IDP) has five stages and persons' IN is considered as a prior condition for that. There, it explains a persons' level of IN as a degree that an individual adopts a new idea relatively earlier than the other members of the system (Rogers, 1971). Practically, Innovation is not always easy to adopt, because it can be complex and expensive to implement (Aboagye, 2016). For these reasons, people use innovations

at different times. Accordingly, a person's level of IN can be classified into segments as; innovators, early adopters, early majority, late majority, and laggards (Rogers, 1971).

Several research papers have studied PI at different levels. For example, Lu et al. (2005) explained that PI has a strong relationship with perceived usefulness and perceived ease of use. Also, Midgley and Dowling (1978) have proposed a model to explain how psychological and sociological traits are associated with IN. He argues that not to consider "time of adopting" a product and PI being similar concepts, since IN always depends on factors like communications and favourable /unfavourable situations.

However, according to Rogers' (1971) IDP, communication influences the consumer's decision making when adopting an innovative product. PI is a prior condition in the IDP and the time of adopting the product is taken as the measurement for the outcome of PI.

Discussing further about IN, Bigné-Alcañiz et al. (2008) describe the IN of a person to be explained as general or product-specific. General IN discusses the openness to new experiences and being a predictor of shopping intention. Product-specific IN has been associated with a specific product or service rather than

with a generic characteristic of an individual's personality.

The above discussion was about the definition given to PI by various researchers. Looking further, researchers have considered PI as a trait and a symbol of risk-taking propensity (Lu et al., 2005; Agarwal & Prasad, 1998; Midgley & Dowling, 1978; Rogers, 1971). When discussing trait in technology adoption, in 2009, Jacques and the team presented a modified TAM model to test how the big five- personality factor model (Extraversion, Agreeableness, Conscientiousness, Neuroticism, Openness) of personality traits (McCrae & Costa, 1997) lead to the intention of using Virtual Reality Systems (VRT). However, that discussion does not talk about PI.

Considering all the facts looking from the perspective of a trait, PI may originate as a reason for a person's characteristics and cultural influences. It might not be right to argue that PI is directly dependent on the communication or situation, but the customer's decision process may do. Therefore, PI and the decision-making process are not the same (Midgley & Dowling, 1978).

Accordingly, although there are many models to explain the process of technology adoption, to the best knowledge of the author, it is required to explore more on PI (as a trait) to

understand the propensity of an individual's technology adoption (Agarwal & Prasad, 1998; Lu et al., 2005). In that sense, the most appropriate theory for further discussion of PI is IDT.

## **2.2. Traits and Culture**

Traits are scientific constructs related to human behaviour; and defined as dimensions of individual differences to show consistent patterns of thoughts, feelings, and actions (Costa & McCrae, 1998; Johnson, 1997). Theoretically, traits do not only base on biological phenomena, but the characteristic adaptations of people for network skills, beliefs, habits, and goals. These characteristics originated from parental modelling, cultural influences, or history of reinforcements. Therefore, every trait can express in cultural conditional ways and must understand through human action and experience. The behaviour in one situation of a person can differ from another. Some may tolerate uncertainty more than others (Costa & McCrae, 1998). But personality traits are enduring dispositions, yet possible to change over a long period as a result of the universal maturation process, life experiences, and restorative interventions. Generally, personality explains about individuals, but culture explains societies. Individuals and culture connect as the bond between trees to the forest (Hofstede & McCrae, 2004; Benedict, 1934)



however, culture is treated as an internal logic of the person then the personality shapes the behaviour of the person (Hofstede & McCrae, 2004; Yaprak, 2008). Thus, it can be argued that being a trait, PI may also have cultural influences on its' characteristics, which is necessary to study further.

### **2.3. Importance of measuring cultural values at the Individual level.**

Culture consists of meanings, beliefs, practices, symbols, norms, values and shapes or justifies beliefs, actions, goals of an individual and groups (Schwartz, 2006). It plays a vital role in the consumer's decision making and creates different behaviours of the individual (Peter & Olson, 2010; Henry, 1976). Learned beliefs or behavioural patterns cope with recurring experiences, passed from generation to generation, and shared by the set of people living in the society. It pervades a person's day-to-day activities and affects consumer behaviour (Henry, 1976; Spiers et al., 2014). Cultures which consider tradition as their terminal value, may be relatively slow in adoption and diffusion curves. But cultures with innovativeness will have much faster adoption cycles. For instance, some cultures heavily weigh some subjective norms like the household elder's opinion, while some cultures tend to emphasize other heroes, or on none at all.

Therefore, the weight of attitudinal and subjective norms may differ from one culture to another (Luna & Gupta, 2001). Culture influences the behaviour of the individual through aspects of values, heroes, rituals, and symbols (Hofstede, 1997, as cited in Luna & Gupta, 2001; Sun, 2008). Schwartz finds that most Asian countries have hierarchical and embedded cultures, which value social order, respect for tradition, security, obedience, wisdom, social power, authority, humility, and wealth.

In Sri Lanka, the identified main socio-cultural factors (such as family, caste, education, class, ethnicity, and religion) have distinctive structures and effects on individual behaviour (Gamage et al., 2003; Nanayakkara, 1985). It has high involvement in developing cultural patterns like dependence, lack of self-confidence, lack of freedom, accepting the status quo, attitude towards work, respect for authority, loyalty, and collective human rights, that are critical to understanding (Gamage & Wickramasinghe, 2012; Rajapakse, 2012). Compared to the Western countries, Sri Lankans prefer a more "structured" social order; therefore, they are less autonomous and more dependent on their surrounding social system (Gamage et al., 2003). According to Hofstede's dimensions, Sri Lanka is in the collectivism dimension (Score of 35); the values of the society

have not built by the individual but by the family. Family orientation was measured by affection for family, interaction with family members, parental influence on thought, and tendency to compromise subjective needs with family needs (Tan & Farley, 1987). For example, decision making within the family is usually made by the parents or spouse. It reduces opportunities for children to evaluate their judgments. They tend to seek advice and approval more frequently: and accepts the opinions of adults. It is a semi-feudal belief that authority is positional and grows with wisdom and age (Nanayakkara, 1985). Hofstede's national dimensions scorecard shows that Sri Lanka scored high in PD, which beliefs more on authority and hesitancy to argue. Further, people tend to evaluate the status of a person from the job they do. The lower social class person tends to depend on the levels above. Top positions are always instituted with power, wealth, and status. This discourages the development of self-confidence but motivates people to gain status and power by working.

The national culture of Sri Lanka is identified as collectivistic, PD and feminine, but not into UA and long-term orientation. But it is required to identify the individual cultural values towards the market. This is because, in the market, the consumer first acquires knowledge and then

physically connects with innovations to gain a general understanding. Before choosing the product, he mentally connects the product with his present and future situations. This mental process is mainly influenced by, his cultural background (Rogers, 1971; Han & Shavitt, 1994).

Most of the studies of cultural values compare nations that vary culturally. But that approach fails to stipulate how personal cultural values are related to marketing. National-level studies on culture standardize that all people within a nation have the same culture, regardless of individual differences in their cultural values. Therefore, to fill this gap, cultural values at the individual level need to be further measured (Yoo & Donthu, 2002; Dobre, Dragomir & Preda, 2009; McCoy, Galletta & King, 2005) Cultural traits can be legitimized and shaped at the level of individual traits. Therefore, it is best to measure personal traits at a cultural level (Hofstede & McCrae, 2004).

### **3. THEORETICAL GAP**

Not all the individuals in the systems adopt a product at the same time (Rogers, 1971). Different individuals respond differently to the same situation, but if they share a common trait, their response is consistent in the same situation (Johnson, 1997). According to the IDT, an individuals' IN is affected by the individual's characteristics, and

by the nature of the social system (Rogers, 1971). Also, some researchers have studied how individuals' IN is affected by an individual's demographic characteristics (Park and Kim, 2010) and investigated how national cultural backgrounds of consumer innovativeness (CI) play cross-culturally (Benedict, 1934). Rogers (1971) has argued that socio-economic status, personality variables, and communication behaviour are identified characteristics of adopter categories that are influencing the decision process. He has not directly talked about the contribution from the culture or cultural values to the PI by considering it as a trait. Hirschman (1980) argues that although there is a lot of empirical research to discuss IN, its' origin has been kept obscure. The reason might be considering IN as a trait; so, it makes them think that an individual is born with the characteristics of IN. Also, over a period of time, all traits may tend to change relative to social and cultural implications.

There are few studies done by different researchers related to IN, still they have not discussed the implications of individual cultural values to the PI. For example, studies of Hirschman (1980) have segregated actual innovativeness to vicarious innovativeness (attainment of new information on new products) and adoptive innovativeness (attainment of

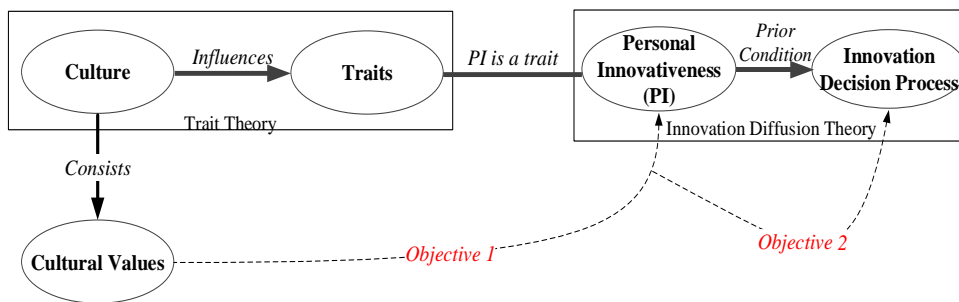
new products). He has hinted that novelty-seeking and creativity influencing the PI. However, he also did not discuss cultural values in his studies.

Like some other examples given in Table 1, it was found that IN is a major area of many research studies. But it was realized that there is a dearth of knowledge on the implications of the internal cultural values of the person (ICV) towards PI. However, the involvement of national culture in innovation is captured in few studies.

**Table 1: Existing knowledge on Innovativeness**

<b>Author and Year</b>	<b>Area of the study</b>
<b>Ostlund (1974)</b>	Predictors of IN (Perceived innovation attributes)
<b>Midgley &amp; Dowling (1978)</b>	IN, Situation effect, Communications
<b>Hirschman (1980)</b>	Novelty seeking, Creativity on IN
<b>Lee (1990)</b>	Determinants of National Innovativeness (NI)
<b>Goldsmith &amp; Hofacker (1991)</b>	Scale to measure IN
<b>Deshpande et al., (1993)</b>	Organizational Innovativeness (OI), Business performance
<b>Lynn &amp; Gelb (1996)</b>	Individualism, UA, Purchasing power on national level, new

	product ownership	<b>Abushanab, Pearson &amp; Setterstrom (2010)</b>	PI, intention to adopt internet banking
<b>Agarwal &amp; Prasad (1998)</b>	PI on intention to use new IT	<b>Park &amp; Kim (2010)</b>	Impacts of an individual innovativeness on the acceptance of IT-based innovations.
<b>Steenkamp et al., (1999)</b>	National dimensions, Resultant conservation, Resultant self enhancement,  Consumer context specific dispositions, Sociodemographic on CI	<b>Lu (2014)</b>	PI, Social influence on perceived usefulness, perceived ease of use, intention toward m-commerce
<b>Garcia &amp; Calantone (2002)</b>	Product innovativeness	<b>Takieddine &amp; Sun (2015)</b>	Internet banking diffusion: Country-level analysis
<b>Roehrich (2004)</b>	CI and measurements	<b>Turan, Tunç &amp; Zehir (2015)</b>	Technology acceptance (TA), PI, and user involvement
<b>Everdingen &amp; Waarts (2003)</b>	National culture on innovation adoption	<b>Truong, Klink, Simmons, Grinstein &amp; Palmer (2017)</b>	CI, brand name
<b>Yeniyurt &amp; Townsend (2003)</b>	National culture on product diffusion with the addition of socio-economic variables as moderators	<b>Abubakre, Zhou &amp; Zhou (2020)</b>	PI, digital entrepreneurship
<b>Lu et al. (2005)</b>	PI, social influence on intention to adopt wireless internet services	<b>Nguyen (2020)</b>	Knowledge sharing, OI
<b>Hwang (2005)</b>	PI and social norms	<b>Chao et al. (2012)</b>	CI, New product adoption
<b>Yi, Jackson, Park &amp; Probst (2006)</b>	PI, subjective norms, Perceived behavioural control, and perceived ease of use.	<b>Esfahani &amp; Reynolds (2021)</b>	
<b>Xu &amp; Gupta (2009)</b>	Privacy concerns and PI on customer's adoption of location-based services		



**Figure 2: Concept Map**

*Note:* Concept Map explains the connection between the concepts, based on the recent evidence found in the literature to express the understanding of the researcher of the concepts relevant to this article (M. Kinchin & B. Hay, 2000; Maxwell, 2012).

The boxes in Figure 1 represent the theories and illustrates the connection between concepts as discussed in the relevant theory itself. For example, according to the IDT, IN is a prior condition for the IDP. The arrows of the diagram show the connections between the concepts found in the literature and the dashed arrows are to visualise the objectives of the research and new areas to explore.

Objective 1: To examine the contribution of ICV to the concept of PI and discover the characteristics of ICVs associated with each PI category discussed in IDT.

Objective 2: To understand how ICV contribute to the IDP of different PI categories.

In further explaining the connections presented in Figure 1, many studies have described PI as a trait and traits inspired by the culture. Table 2 illustrates the latest findings on the same.

**Table 2: Existing literature on Personal Innovativeness and Traits**

	Author and the Year
<b>PI as a Trait</b>	(Leavitt & Walton, 1975; Midgley & Dowling, 1978; Hirschman, 1980; Venkatraman, 1991; Agarwal & Prasad, 1998; Roehrich, 2004; Lu et al., 2005; Dobre et al., 2009; Xu & Gupta, 2009; Park & Kim, 2010; Bouwman et al., 2014; Lu, 2014; Rahman et al., 2014; Thakur, Angriawan &

	Summey,2016; Truong et al.,2017; Krey et al.,2019; Klein,Horak, Li & Bacouel ,2019;Esfahani & Reynolds ,2021)
<b>Traits influenced by culture</b>	(McCrae & Costa ,1997; McCrae & Costa ,1998; Church ,2000; Hofstede & McCrae ,2004; Fleeson & Jayawickreme ,2015)

Also, as stated in many definitions; culture influences society by its values (Deshpande et al.,1993; Yenyurt & Townsend, 2003; Kirkman et al.,2006; Geertz, 1973; Hofstede & McCrae, 2004; Benedict, 1934; Yaprak, 2008; Gamage & Wickramasinghe,2012; Maitland, 1999). So, it is important to study the value structure when understanding IN, its significance to the customer's cognitive structure, and personal values (Steenkamp et al., 1999). The values pretence on consumer motives, intention, and attitude of the person; also, it can be used to explain a culture or a subgroup (Henry, 1976; Sun, 2008; Schwartz, 2006; Daghfous et al.,1999).

As visualized in Table 3, there are published studies describing

the relationship between values and IN in different phases. For example, they discuss OI, NI, and CI. Similar research done by Sun, Lee & Law (2018) has shown the impact of cultural values (collectivism, long-term orientation, and masculinity) on TA at the individual level. There, they measure national cultural values on an individual level. Also, Soares et al. (2007) make a similar point in their study, explaining how an individual behaves in individualistic/collectivistic, UA, PD, and MF societies and how it results in innovativeness. In another aspect, Steenkamp et al., (1999) expound how customer IN is affected by national cultural values and has found consumers in individualistic and masculine countries are more innovative compared to the customers of UA. Similarly, Steenkamp et al., (1999) and Dobre et al., (2009) have explained the receptivity of a person to culture by discussing the cultural dimensions broadly in the national perspective. However, up to now far, too little attention has been given to understanding ICV (emerging from the inside) into PI but rather many of the studies have covered national cultural values into individual contexts or have conducted cross-cultural studies.

**Table 3: Existing literature on values to the innovativeness, diffusion, and technology acceptance**

	<b>Values covered in the research</b>	<b>Author and the Year</b>
<b>CI</b>	<b>Personal values</b> (Sensation-seeking, Pleasure and happiness in life, Warm relationships, Self-respect, Respect by others, Search for security, Sense of belonging)	Daghfous, Petrof & Pons (1999)
	<b>Consumer values</b> (Functional value, Social value, Epistemic value, Conditional value, Emotional value)	Hur et al., (2011)
	<b>Social Values</b> (Being well respected, Security, Sense of belonging, Excitement, Self-respect, Sense of accomplishment, Fun and enjoyment of life, Self-fulfilment, Warm relationship)	Goldsmith & Stith (1993)
	<b>Social Values</b> (Opinion leadership, Status)	Rahman et al. (2014)
	Cultural Values to Cross-cultural study	Soares et al., (2007)
	<b>Personal Values</b> (Resultant conservation, Resultant self-enhancement) <b>National Cultural Values</b>	Steenkamp et al. (1999)
<b>IN</b>	<b>National Cultural Values</b>	Dobre et al. (2009)
<b>Network Diffusion</b>		Maitland (1999)

NI		Lynn & Gelb (1996)
		Guillén & Deckert (2021)
National Diffusion		Yeniyurt & Townsend (2003)
TA at an Individual level		Sun et al. (2018)
OI	<b>Individual Values</b> (Power, Achievement)	Taştan & Davoudi, (2017)
PI	<b>Functional and ergonomic Values</b> (Expected usefulness, Expected ease of use)  <b>Hedonic Values</b> (Expected enjoyments)  <b>Symbolic Values</b> (Expected visibility, Expected self-expressiveness)	Krey et al. (2019)
Innate innovativeness and Fashion innovativeness	<b>Personal Values</b> (Personal self, Ambition, Power)	Lyu, Hahn & Sadachar (2018)
IN	<b>Personal Values</b>  (Stimulation, Self-direction, Universalism, Benevolence, Tradition, Conformity, Security, Power, Achievement, Hedonism, Self-enhancement, Conservation, Self-transcendence, Openness to change)	Potocan & Nedelko (2013)
Technological innovativeness	<b>Cultural Values (Cross cultural)</b>	Klein et al. (2019)
Employee Innovativeness	<b>Organizational cultural values</b>	Hab'Imana & Ssempebwa (2020)



The concepts presented in Hofstede's value dimensions have been used for many cultural and cross-cultural studies to understand national cultures (Hofstede & Bond, 1984; Hooi, 2007; Mooij & Hofstede, 2011; Mooij & Hofstede, 2010; Hofstede, 1983; Sharma, 2010; Kassim & Abdullah, 2010; Roth, 1995; Soares et al., 2007). The same dimensions were recommended to consider as individual values for understanding the behaviour of an individual (Donthu & Yoo, 1998; Kirkman et al., 2006; Hofstede, 2011; Roth, 1995; Yoo et al., 2011; Gong et al., 2007; Han & Shavitt, 1994; Sun et al., 2018; Hwang, 2005; Jung & Kellaris, 2004; Hui & Triandis, 1986; Daniels & Greguras, 2014). However, none of the above researchers has focused on understanding the impact of these concepts on IN as a value or as a characteristic of an individual. For example, it is required to understand how an individual with individualistic or collectivistic characteristics, follows up on their IN. Maybe the country or society is into the individualistic category, but a native could be a collectivistic person who believes in taking opinions from his family or friends before making a decision. In such scenarios, the IN of the person could result differently

regardless of the cultural value of the entire country. Although the concepts of IC, MF, PD, and UA are grouped together in

Hofstede's dimension, those concepts are not limited to Hofstede's value in dimension only. These concepts are theoretical concepts used by many researchers and theorists in their studies. For example, the Theory of Individualism and collectivism talks about individualism and collectivism; Social Distance Theory of Power talks about Power Distance; Feminist Theory talks about Masculinity and Femininity, and Theory of Uncertainty Identity discusses how people avoid uncertainty by understanding the uncertainty.

Some research explains the effect of IN is significant when individuals observe social identifications and cultural values (Hur, Yoo & Chung, 2011). Identifying a relationship between social values on IN for a particular product does not prevent further exploration but require deep investigation on understanding its behaviour for a separate or new product category (Goldsmith & Stithx, 1993).

Overall, there is limited knowledge yet on how PI contributed by the individual's cultural values which might be generated by the origin of his family, groups, past experiences, and culture of the society. If one researcher identifies the motives behind the behaviour, another could recognise that the identified clarification is incomplete. Therefore, further studies are extremely required to find the

origin of the traits and beliefs (Johnson,1997). Regardless of globalization and convergence of markets, consumers continue to reclaim their cultural identities, heritage, and ancestry. Because of the markets being driven by the customer's needs and those needs are purely based on cultural values, marketers must understand cultural implications on consumer behaviour when positioning the products (Yaprak, 2008; Aaker & Maheshwaran, 1997; Liu, Furrer, & Sudharshan,2001; Cakir & Solak, 2015). Failing to consider the differences created by the culture might cause failure in the business (Spiers et al., 2014). Though technology solutions are utilized to coordinate, communicate, and achieve efficiencies, cultural differences of countries might impact the efficiency and effectiveness of IT deployment (Straub et al, 2002). In brief, culture is explained as the way of life of the people and certainly has implications for an individual's behaviour (Maitland, 1999). In light of this, many researchers have recommended examining culture and social influences (Shiraj, 2015; Alalwan et al.,2014; Alsajjan & Dennis, 2010; AbuShanab et al., 2010).

As mentioned above, it is important to look at the contribution of ICV into PI. But the study does not end there. As mentioned in the IDT, PI is a key element for IDP. If so, the influences of ICV could extend to

IDP. In that case, if it is found that ICV inspires PI, then it should also look at how it inspires IDP. This requirement is captured by objective 2 described above. It is required to see how ICV inspires each stage of IDP to understand its contribution to the final decision of the customer. The study methodology required to meet these objectives is described below.

#### **4. METHODOLOGY**

This is a conceptual paper with an ongoing qualitative study, that would surface the hidden insights of the people and would understand the meanings of the individual by observing how that person's IN has influenced by his cultural values. This follows an inductive approach since it understands the meaning of humans' for using a product and it makes it less apprehensive to generalize the result (Saunders et al., 2009). The sample has been selected using the purposive sampling mechanism to capture all the PI categories (Innovators, early adopters, early majority, late majority, and laggards). The selected respondents were interviewed with semi-structured questions to meet objective 1 and 2. Responses will be analysed using thematic analysis to understand the themes and sub-themes of the study.

## 5. CONCLUSION

This article highlights a theoretical gap, that will be addressed by the research question and objectives. The results of the overall study will contribute to the theory, by providing an extension to the IDP and will explain IDP from a cultural perspective. In addition to the theoretical contribution, this research will benefit the industry under study for better decision making. Consumers think before they get to a facility. They would recognize service or product better that speaks to their culture (Takieddine & Sun, 2015; Abessi & Haghighy, 2011; Chau & Lai, 2003). This research results will shed light on industrial specialists to get a better understanding of the areas where ICV becomes a reason for customers' negative or positive behaviour. For example, if adopting a product/service depends on risk analysis, which means people are more considerate of uncertainty avoidance (Hofstede,2011). Then the Industry specialists should focus on strengthening the security of the technology. In other words, if the research results show that Laggards are focused on collectivism; when designing promotional campaigns, industry specialists should remember that collectivists are "we conscious". Therefore, to motivate Laggards to get the product, they should focus more on team benefits (Hofstede,2011; Hofstede &

McCrae, 2004). Likewise, this study expands the academic/industry knowledge about the cultural values of individuals according to their PI category. For instance, studying innovators and identifying their ICV will discern if those ICVs impacts for him to become an innovator. In doing so, the author effectively advocates product / service providers on the verge of new developments; Here, the focus is on the interventions needed to improve the client's PI or their past experience, knowledge, and their feasibility exceptions, etc.

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## Evaluating E-Learning Systems Success: A Case of Sri Lanka

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### Abstract

E-learning, the product of technology and education, has emerged as a powerful medium of learning particularly in the higher education sector. Significance of e-learning in educational services has led to a massive growth in the number of e-learning courses and systems offering different types of services followed by the COVID 19 pandemic. Thus, evaluation of e-learning -systems is critical to ensure successful delivery, effective use, and positive impacts on learners. Survey data of Sri Lankan university student's sample tested the research hypotheses. Quantitative assessment of determinants of PLS-SEM results confirms 81.7% explanatory power of the predictor variables in explaining the variance of E-Learning Success among which Instructor Quality, Learner Quality, Service Quality, Support System Quality and Technical System Quality found significant predictors. Implications invite revisiting the theoretical models to assess the e-learning effectiveness by incorporating multifarious factors while developing e-learning system of multifractality found critical for the success of any electronically driven learning experience.

**Keywords-:** E-Learning, E-Learning System, E-Learning System Success, PLS-SEM

### 1. INTRODUCTION

The advancement of information technology has paved way to success in many sectors such as health, finance, transportation, and agriculture...etc. In line with that wave of e-transformation, education sector too has integrated technology to its

various deliverables in order to meet the expectations of stakeholders effectively. As such, Electronic Learning (E-Learning) simply is the technological adoption of education that is been vastly practiced by many educational institutions



nowadays. Choudhury and Pattnaik (2020) defined e-learning as transfer of knowledge and skills, in a well-designed course content that has established accreditations, through an electronic media like the Internet, Web 4.0, intranet and extranets. The main stakeholders of e-learning include learners, faculty, administrative & technical staff, and employers (Choudhury & Pattnaik, 2020). E-learning found to be having a greater effect on academic performance (Abbasi et al., 2020; Almaiah et al., 2020; Ebner et al., 2020; Maldonado et al., 2011, Radha et al., 2020). It encompasses a range of activities: from supported learning to blended learning and to pure e-learning (Cruz-Jesus et al. 2016; Aboagye, 2021; Radha, 2018). Online learning systems provide benefits for stakeholders located around the world. Advantages of e-learning for learners include an increased accessibility to information, better content delivery, personalized instruction, content standardization, accountability, on-demand availability, self-pacing, interactivity, confidence, and increased convenience. Minimization of costs, enabling a consistent delivery of content, and improved tracking are among the other benefits of e-learning to the faculty (Sander, 2020; Al-Marroof, 2021). E-learning reduces classroom and facilities cost, training cost, travel cost, printed materials cost, labor cost,

and information overload (Sander, 2020; Choudhury & Pattnaik, 2020; Al-Marroof, 2021). E-learning initiatives call for considerable investments in technology such as hardware costs, software licenses, learning material development, equipment maintenance, and training (Abbasi et al., 2020; Al-Marroof, 2021). Al-Marroof (2021) concluded that e-learning has huge potential and can reduce costs in comparison to a traditional class room environment after initial course development. Despite these benefits, e-learning has a higher drop-out rate than traditional delivery modes (Abbasi et al., 2020; Almaiah et al., 2020; Ebner et al., 2020; Radha et al., 2020).

Nowadays, educational technologies have quickly evolved along with the prompt development of ICTs (Al-Emran and Shaalan 2015, 2017; Salloum et al., 2017; Ali et al., 2018). The last two decades have witnessed an increase in the prevalence of the internet due to the reason that universities and other educational institutions have made investments in information systems (For instance Moodle, Blackboard, Google Class...etc.) so as to help in face-to-face as well as distant course delivery (Tarhini et al., 2013; Teo et al., 2020). Using e-learning along with networked computers facilitates transmitting the digitized knowledge from the online sources to the end-user

devices, such as a laptop, desktop and handheld devices (Misra et al. 2014; Behera 2013; Salloumet al., 2019, Shahmoradi et al., 2018).

In par with the other parallel development, the global online learning industry is sporting massive annual growth of 19% or more per year, and it's set to be a \$243 billion industry within next two years following the COVID 19 pandemic (Sander, 2020). The United States is still at the forefront of the industry in terms of market size, but other regions such as Europe, Latin America, and Asia are also starting to become increasingly prevalent players in the industry (Sander, 2020). The demand for e-learning platforms also raised due to the COVID 19 pandemic situation in the world. The lockdowns restricted physical presences and encouraged to continue studies with e-learning platforms. Consequently, the education activities across the globe are moving with the aid of e-learning systems where the quality of e-learning systems matters today more than ever.

Among the top most concerns of the e-learning are the quality of e-learning deliverables. This has received a substantial level of attention by scholars resulting immense number of research outcomes those attempted to clarify different facets of e-learning quality (Ali & Ahmad, 2011; Fathema, Shannon

& Ross, 2015; Mohammadi, 2015; Mtebe & Raphael, 2018; Sander, 2020). In a nutshell, majority of these studies have examined individual aspect of key determinants of e-learning systems success ignoring the synergistic effects of all determinants affecting the success of e-learning systems (Eom & Ashill, 2018; Janelli, 2018). Alternatively, some has looked in to the direct relationships between e-learning quality factors and usage or satisfaction which is again not addressing the system as a whole operating unit (Janelli, 2018; Mtebe & Raphael, 2018; Sander, 2020).

Success of e-learning systems found to be multifaceted (Sander, 2020). Hence, any assessment should primarily account both the individual effect and the combined effect of the predictors. Additionally, the level of influence reported to vary by the context itself too (Janelli, 2018; Ebner et al., 2020). On account of the fact that e-learning success factors vary in terms of their relative significance based on the context, different strategies have been adopted to deal with these factors. For example, in developing countries, obstacles are found in resources, accessibility & infrastructure, as well as in existence of communication features, and the important role of social factors (e.g. learner and instructor) receive more attention. In

contrast, in the context of developed countries, enhancing lifelong education, quality of information, usefulness of the systems, and ethical & legal considerations are more pronounced (Mohammadi, 2015; Thiyagarajan & Suguanthi, 2021). Moreover, e-learning is still in its infancy in developing countries where the successful implementation is challenged by context-specific factors unique to them. Despite the interest of many developing countries to implement e-learning (Grönlund & Islam, 2010), many encounter obstacles in infrastructure, resources, information access (Thiyagarajan & Suguanthi, 2021), personal characteristics, support from institution (Brinkerhoff, 2006), technology & connectivity, instructors' design & technology confidence (Janelli, 2018), as well as culture and policy (Mtebe & Raphael, 2018). In addressing this issue, Alshare, Al-Dwaire & Akour (2003) once reported that technology integration within education in developing countries is lagging due to cultural, political and economic concerns where the objective of e-learning is to provide basic education to a large number of poor students. This is very different from the objective of e-learning in developed countries, which aims to develop an effective knowledge economy and enhance lifelong education (Gulati, 2008; Hubalovsky, 2019). Regardless of these challenges, opportunities

still exist to improve the effectiveness and success of e-learning (Ebner et al., 2020; Thiyagarajan & Suguanthi, 2021). Besides, the critical evaluation of the success factors of e-learning systems will aid in satisfying the expectations of all its stakeholders. As an emerging nation, Sri Lanka has a great potential to move forward with technological advancements. Investments in such pre-assessed, well-planned and goal-oriented technological systems are of greater demand than unplanned and ad-hoc investments on system development or modification. Therefore, the various aspects which determine the success of e-learning systems will be a prime concern for its further developments and meeting learner needs. Motivated by these empirical lapses, the present study focused on evaluating the e-learning system success referring to the context of a developing country; the Sri Lanka.

Seamless evolution of technology has caused that there is no single consensual definition for e-learning (Al-Fraihat et al, 2020). Lee, Hsieh, and Hsu (2011) defined e-learning as “an information system that can integrate a wide variety of instructional material (via audio, video, and text mediums) conveyed through e-mail, live chat sessions, online discussions, forums, quizzes, and assignments”. Other researchers

use the concept of e-learning to refer to the technology intervention in the learning process (e.g., Sun, Tsai, Finger, Chen & Yeh, 2008).

Classification of studies in e-learning from 2001 to 2016, by Cidral, Oliveira, DiFelice & Aparicio (2018) shows us that the studies from 2001 have started with a focus on intention to use, adoption, usability, course contents and customization. Later, from 2007 onwards it has evolved to include user satisfaction. The focus of e-learning researches from 2013 were mainly centered on the overall success of e-learning systems and on how students' characteristics affect e-learning (Cidral et al., 2018). In general, earlier studies have been concerned more about the technology itself. However, as the technology becomes increasingly reliable and accessible, recent research has focused more on students' & instructors' attitudes and interactions, those play a vital role in e-learning success (Cheng, 2011; Liaw, Huang & Chen, 2007; Selim, 2007; Al-Samarraie et al., 2018). Yet, only very few if not no studies have analyzed how the collective effect of e-learning success factors can explain the success of e-learning systems. With the widespread use of e-learning platforms, a further investigation is timely important to evaluate the success of e-learning systems

accounting observed multi dimensionality of the construct.

### ***Success of e-learning systems***

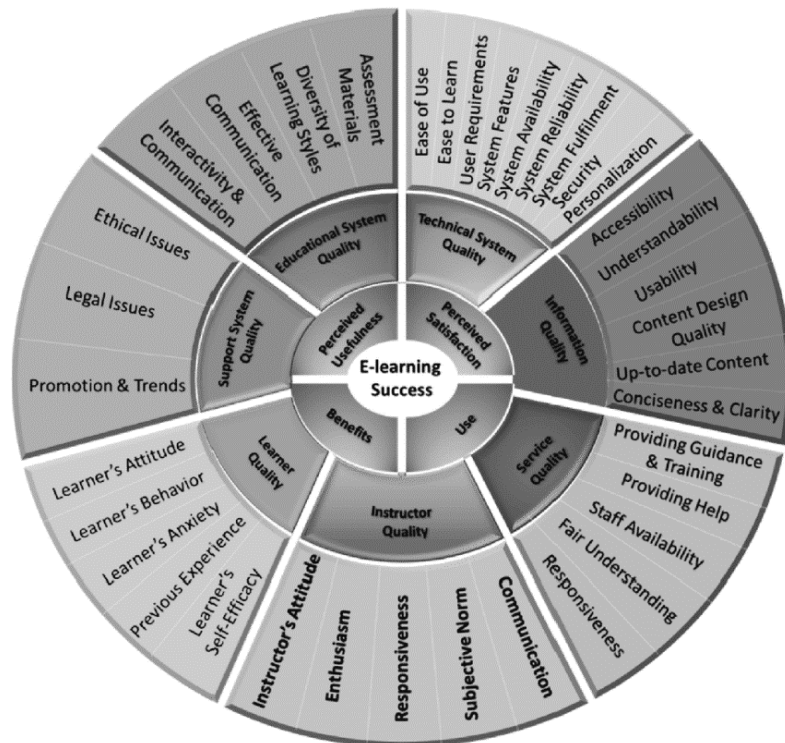
As stated by Alireza, Fatemeh and Shában (2012) the emergence of modern technologies has promised to provide equal educational opportunities everywhere for everyone and also, diverse courses continuously. In fact, without considering the main components of learning, application of the most advanced and latest technology is in vain, and will have merely advertising aspect rather than educational. On the other hand, since unsuccessful effort in implementing e-learning is reflected in terms of return on investment, the success of e-learning is one of the important issues (Govindasamy, 2002). In an e-learning system, not only the learner, but also all stakeholders are important. It is no doubt that internet and other digital technologies are able to support e-learning in an open, flexible and distributed environment. But how? Due to the differences between e-learning and traditional learning in some aspects, effective and successful conversion of traditional courses to e-learning may need a complex attempt and requires accurate planning, monitoring and control (Cantoni, Cellario, and Porta, 2004; Bhat et al., 2018; Fernando et al., 2019). In fact, continuity of global demand growth for e-learning and acceptance of virtual communities needs to measure

their effectiveness and usefulness in education (Valencia-Arias ;2019, Chopra et al., 2018).

**Models on success of e-learning systems**

The previous literature suggests different models relating to the success of e-learning : DeLone and McLean information systems success model; the Technology Acceptance Model (TAM); the User Satisfaction Models; and E-Learning Quality Models (Al-Fraihat et al.,2018) and Multidimensional Conceptual Model for Evaluating E-learning System Success (Al-Fraihat et al.,2020). The present study

adopts Multidimensional Conceptual Model for Evaluating E-learning System Success (Al-Fraihat et al.,2020) as the model comprised with greater explanatory power, and focus on variety of technical, human and social factors to evaluate the success of such systems. Further, the researchers recommended to extend their investigation to the universities in developing countries by testing their model. According the present study followed Multidimensional Conceptual Model for Evaluating E-learning System Success (Al-Fraihat et al.,2020) as depicted in figure 1.



**Figure 1: Multidimensional Conceptual Model for Evaluating E-learning System Success (EESS model).**

Source: Al-Fraihat, D., Joy, M., and Sinclair, J. (2020)

The ESSS model is one which includes seven independent constructs: technical system quality, information quality, service quality, educational system quality, support system quality, learner quality, and instructor quality. In addition,

there are four dependent constructs: perceived satisfaction, perceived usefulness, system use, and benefits. Accordingly, the research model for the study developed as presented in figure 2.



Figure 2 : Research Model

### Research Hypotheses

The hypotheses developed based on the connections in the model are presented in this section.

#### *System quality (SQ)*

In the original model of DeLone and McLean (2003) the researchers assumed that system quality directly affects use and

user satisfaction. Several researchers applied the DeLone and McLean model in the information systems context and found a positive association between system quality and use (Halawi, McCarthy, and Aronson, 2008; Po-An Hsieh and Wang, 2007; Iivari, 2005; Tularam, 2018). In the e-learning

systems context, system quality was also proved to be strongly related to use (Balaban, Mu, and Divjak, 2013; Garcia-Smith and Effken, 2013; Lin, 2007; Marjanovic et al., 2016). Based on these findings, researchers therefore, assume that the higher the technical quality of the e-learning system, the more satisfied the users are. Also, if users find the e-learning system compatible with their requirements, this would positively make users utilize it and consider it useful. Thus, the following hypothesis is proposed:

H1: Technical system quality positively influences success of e-learning system

#### ***Information quality (IQ)***

The relationships between information quality and each of the three constructs – use, satisfaction, and usefulness – have been studied empirically by e-learning researchers. For example, Klobas and McGill (2010) and c) found a significant relationship between information quality and both use and satisfaction with the Learning Management System (LMS). The relationship between information quality and perceived usefulness was found significant in the study of Chen (2010) with e-learning systems in an organizational context, and a similar result found by Lwoga (2014) with web-based LMSs. Therefore, we may assume that improved quality of information in the e-

learning system will positively lead to an increase in perceived usefulness, perceived satisfaction, and system usage. Thus, we hypothesize that:

H2: Information quality positively influences success of e-learning system

#### ***Service quality (SQ)***

The construct has been utilized in the information systems field. For example, the relationship between SRQ and satisfaction was confirmed by Chen and Cheng (2009) in an online shopping system. The direct relationship between SRQ and use was found significant by Wang and Liao (2008) in an e-government system. Similarly, in the context of e-learning, the relationship between SRQ and satisfaction was found significant in the Roca et al. (2006) and Ozkan and Koseler (2009) models. The relationship between SRQ and perceived usefulness proposed in the conceptual model developed by Pham (2019), Hagos, Garfield, and Anteneh (2016) and Lwoga (2014) was shown empirically to be significant in the study conducted by Al-Sabawy (2013) and Ngai, Poon, and Chan (2007). Accordingly, the following hypothesis are proposed:

H3: Service quality positively influences success of e-learning system

### ***Educational system quality (ESQ)***

Hassanzadeh et al. (2012) found that educational system quality positively and directly influences user satisfaction and indirectly the use of the system, which indicates that educational features in the e-learning system, and facilities like discussion forums, chat-rooms, collaborative learning tools, can result in user satisfaction and maximizing their usage of the e-learning systems. Social interaction was employed as a key factor of success in computer supported collaborative learning (CSCL) and found to have a significant effect on student learning (Xing, Kim, and Goggins, 2015; Nikolić, 2018; Nikolić, 2019). The relationship between educational system quality and perceived usefulness was found significant for web-based e-learning systems in the study undertaken by Liu, Liao, and Peng (2005) and by Almaiah et al.(2016) for mobile learning systems. Kim, Trimi, Park, and Rhee (2012), Nikolić et al. and Mohammadi (2015) found a positive relationship between educational system quality and satisfaction. In addition, the relationships between diversity in assessment materials, and learner interaction in the e-learning system with perceived satisfaction, were found significant by Cidral et al. (2018). Further, the relationship between educational system features and usefulness was found significant by Liu et al. (2005) for a web-

based e-learning system. The same results were obtained by Liaw and Huang (2013) where a significant relationship between the interactive learning environment construct with both perceived usefulness and perceived satisfaction was found. Therefore, the following hypothesis about educational system quality are proposed:

H4: Educational System Quality positively influences the success of e-learning system

### ***Support system quality (SUP)***

In the literature on e-learning system success, supportive issues in the e-learning system such as ethics and policies that outline rules, regulations, guidelines and prohibitions to communicate within the e-learning system, assignments' plagiarism rules, data protection, and other legal and copyright issues of the uploaded materials in the e-learning system, in addition to the popularity and policy followed by the organization, all these issues influence the learners significantly (Khan, 2005). For example, in the empirical study conducted by Ozkan and Koseler (2009), the use of the LMS at Brunel University has increased significantly due to the encouragement students and academics received from the university to use the LMS in their modules. The researchers stated "the use of U-Link has increased significantly during the last three years. This is mainly because of



the increasing popularity of e-learning portals.” The researchers studied the relationship between supportive system issues and satisfaction and found it significant. On the other hand, the organizational promotion of the e-learning system significantly and positively affected employees’ satisfaction in the study conducted by Navimipour and Zareie (2015). As stated by (Al-Fraihat et al, 2020), the popularity of the e-learning system, and the policy followed by the organization to promote their e-learning system, play an important role in increasing the usage of the system by academics and learners. Therefore, researchers propose the following hypothesis:

H5: Support System Quality positively influences the success of e-learning system

#### ***Learner quality (LER)***

This construct was successfully operated in several models developed by prior e-learning researchers. Several researchers examined a subset of the learner quality construct, for example, the learner’s self-efficacy was studied by Ong, Lai, and Wang (2004) and a significant relationship with perceived usefulness was found. The same result was achieved by Park (2009). McGill and Klobas (2009); Rakic et al. (2020) studied the relationship between learner attitude toward LMS use and LMS utilization and found it

significant. Additionally, the relationships between student involvement and both use and satisfaction were found significant in the study of Klobas and McGill (2010). Also, the relationships between self-efficacy and a learner’s computer anxiety with perceived usefulness were studied by Chen and Tseng (2012). The relationship between learner and perceived satisfaction was found significant in the models of Sun et al. (2008) and Ozkan and Koseler (2009). Given the positive relations of the indicators associated with the variety of learner’s characteristics, it is more likely that the quality of the learner will influence perceived usefulness and use of the system. Thus, propose the following hypothesis:

H6: Learner Quality positively influences the success of e-learning system

#### ***Instructor quality (INS)***

According to (Al-Fraihat et al, 2020) the instructor’s role in the success of e-learning has received attention from researchers in the e-learning arena. To clarify, the model developed by Sun et al. (2008) researched the relationship between the instructor dimension, using two indicators (instructor response timeliness, instructor attitude toward e-learning), and satisfaction, and found it positively significant. Similar results were obtained by Cidral et al. (2018) where a positive

relationship found between instructor attitude toward e-learning and user's satisfaction. Lwoga (2014) employed instructor quality as a separate construct and confirmed a positive significant relationship between instructor quality and both perceived usefulness and user satisfaction. Also, instructor quality has been found to have a significant effect on learners' satisfaction with an e-learning system in the study conducted by Mtebe and Raphael (2018). Thereby the following hypothesis is proposed;

H7: Instructor Quality positively influences the success of e-learning system

## 2. METHODS

Present study adopts EESS model (Al-Fraihat et al.,2020) based on its greater explanatory power and inclusion of wider range of predictive variables such as technical, human and social. An empirical study of quantitative approach tested the EESS model based on the LMS of a Sri Lankan state university; Wayamba University of Sri Lanka. Data collection led by instrumentalization of an online questionnaire among the level 03 undergraduates who are enrolled to Moodle based LMS of Wayamba University of Sri Lanka. Moodle was selected to test the model of the study because the University of Wayamba has adopted Moodle as

the main e-learning system designed to support teaching and learning materials and activities, and to provide a number of interactive activities including forums, wikis, quizzes, surveys, chat and peer-to peer activities, serving most of the departments and students. In addition, Moodle is widely used in the education sector generally and in higher education specifically. The online survey assessed the success of ELS which is a Moodle based LMS. Sample size determination followed the "10-times rule method" which is a commonly used classic rule for deciding the sample size of Partial Least Square - Structural Equation Modelling (PLS-SEM). (Hair et al., 2011; Peng and Lai, 2012). There, the sample size should be greater than 10 times the maximum number of inner or outer model links pointing at any latent variable in the model (Goodhue et al., 2012). This yielded 70 (7\*10) sample units whistle the researchers succeed in drawing 263 valid responses via online survey of selected group. The sampling frame was a list of ELS IDs of all internal undergraduates of WUSL. Using lottery method, 5 times of minimum required sample size was drawn so as to avoid the potential problem of low responses. Resultantly, authors received 263 out of 350 (75%) e-mailed questionnaires. Undergraduates, the study's unit of analysis offered an evaluation of the ELS properties based on

system design, system delivery, and system outcome. The refined instruments (Al-Fraihat et al, 2020) based on measurement model validity and reliability indexes composed of 52 items falling in to seven exogenous variables (predictors) namely, Technical System Quality (TSQ), Information Quality (IQ), Service Quality (SQ), Educational System Quality (ESQ), Support System Quality (SSQ), Learner Quality (LQ), and Instructor Quality (IQ). The endogenous variable; E-Learning System Success (ELSS) contained of four reflective first-order constructs namely, Perceived Satisfaction (PS), Perceived Usefulness (PU), and Use (U) and Benefits (B) of ELSSs. 5-point Likert scale was the measure of the responses in which the “1” stands for “Strongly Disagree” and 5 denotes “Strongly Agree”. The questionnaire was pre-tested for its clarity and easy understanding through a pilot study and the face validity was achieved by obtaining the experts views of the same. Partial Least Square - Structural Equation Model (PLS-

SEM) deemed to be well explaining the relationship of nexus of latent variables. It generates less contradictory results compared to regression analysis and facilitates analyzing the relationships of multiple independent and dependent variables. Further, PLS-SEM is good at increasing the parsimonious of the analysis (Hair, et al., 2011; Hair, et al., 2014; Ringle, et al., 2012; Wong, 2013). Hierarchical Component Model (HCM) of the collected data was developed using Smart PLS version 3.

### 3. RESULTS

The endogenous variable, E-Learning System Success composed of four first order measures of which the measurement model was first analyzed for its reliability and validity (Hair, Sarstedt, Ringle, and Mena, 2012). Factor loadings of all the items leading to four constructs satisfy the threshold value 0.7 at the 95% confidence level (Table 1).

**Table 1: Properties of First -Order Measurement Model**

Construct/Item	Loading	t-Statistics	CR	AVE	rho_A	Cronbach Alpha
E-Learning System Success-----Perceived Satisfaction						
PS42	0.928	68.365	0.96 1	0.859	0.945	0.945
PS43	0.926	64.917				
PS44	0.925	80.818				
PS45	0.928	71.516				

E-Learning System Success-----Perceived Usefulness						
PU46	0.899	47.581	0.959	0.853	0.943	0.942
PU47	0.942	93.512				
PU48	0.931	70.046				
PU49	0.922	62.565				
E-Learning System Success-----Use of E-Learning Systems						
U50	0.864	46.397	0.903	0.700	0.858	0.855
U51	0.878	38.568				
U52	0.870	36.736				
U53	0.726	20.589				
E-Learning System Success-----Benefits of E-Learning Systems						
B54	0.892	40.552	0.957	0.818	0.957	0.944
B55	0.917	52.596				
B56	0.896	39.476				
B57	0.896	52.528				
B58	0.920	70.032				

n=263

Survey Results (2020)

The Cronbach Alpha values of four constructs range between 0.855 and 0.945. Henseler's rho (rho\_A) values of these constructs range between 0.858 and 0.945. Further, the Composite Reliability (CR) of these constructs falls in between 0.903 and 0.961. For all measures of internal consistency, all constructs scored well above the threshold value of 0.7 as recommended by Nunally (1978). This indicates the high reliability of all four first-order constructs. Factor Loading and Average Variance Extracted (AVE) are considered standard measures of the convergent validity (Hair, et al., 2017; Byrne, 2016; Bagozzi, and Yi, 1998; Fronell, and Larcker, 1981). The AVE values of these constructs fall in

between 0.700 and 0.859. Convergent validity of the constructs considered adequate when the AVE exceed 0.5 (Bagozzi, and Yi, 1998; Fronell, and Larcker, 1981). Additionally, factor loadings of latent variables those greater than 0.708 theorized to be explaining minimum 50% or more of the indicator's variance of it (Hair, et al., 2017). Here, the factor loadings of all the indicators of the first-order model are between 0.726 and 0.942. Accordingly, it is evidenced that the all constructs satisfy the convergent validity criterion. Next, the first-order constructs are examined for their discriminant validity. For an acceptable level of discriminant validity, Fronell, and Larcker, (1981) recommended that the

AVE of a latent variable should be higher than the squared correlations between the latent variables and all other variables (Chin, 2010; Chin, 1998b; Fronell, and Larcker,1981). Table 2 demonstrates the correlation matrix with the square roots of AVEs on the diagonal line (in Bold) which indicates an acceptable level of discriminant validity according to Fronell, and Larcker criterion (i.e. AVE criterion). Additionally, cross loadings are also used as a

discriminant validity measure where it is expected for each indicator to load highest on the construct it is associated with (Henseler, et al., 2015; Voorhees, et al., 2016). Examination of loading of each indicator on its respective latent variable ensured that all are loaded highest on the latent variable for which they are assigned. Thus, all the constructs of first-order model confirmed to be holding acceptable level of discriminant validity.

**Table 2 : Correlation Matrix – Discriminant Validity of First-Order Measurement Model**

		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>1</b>	Benefits	<b>0.904</b>			
<b>2</b>	Perceive Satisfaction	0.844	<b>0.927</b>		
<b>3</b>	Perceived Usefulness	0.841	0.860	<b>0.924</b>	
<b>4</b>	Use	0.393	0.385	0.388	<b>0.837</b>

n=263

Survey Results (2020)

The second-order model of the constructs is then assessed for ensuring the dimensional properties of it. Latent variable scores of the first-order constructs are used in establishing the second-order model of eight endogenous variables namely, E-Learning System Success (ELSS),

Technical System Quality (TSQ), Information Quality (IQ), Service Quality (SQ), Educational System Quality (ESQ), Support System Quality (SSQ), Learner Quality (LQ), and Instructor Quality (IQ). Table 3 shows the key measures of validity and reliability of the second-order constructs.

**Table 3 : Properties of Second -Order Measurement Model**

Construct/Item	Loading	t- Statistics	CR	AVE	rho_A	Cronbach Alpha
E-Learning System Success						
Perceived Satisfaction	0.941	84.318	0.913	0.732	0.930	0.866
Perceived Usefulness	0.938	66.754				
Use	<b>0.537</b>	7.321				
Benefits	0.936	89.054				
Technical System Quality						
TSQ1	<b>0.690</b>	13.590	0.926	0.534	0.918	0.913
TSQ2	<b>0.695</b>	14.011				
TSQ3	0.750	18.395				
TSQ4	0.775	25.011				
TSQ5	0.780	21.940				
TSQ6	0.759	13.964				
TSQ7	0.794	19.920				
TSQ8	0.764	15.150				
TSQ9	<b>0.669</b>	9.517				
TSQ10	<b>0.635</b>	12.339				
TSQ11	0.708	16.223				
Support System Quality						
SSQ28	0.870	45.035	0.931	0.773	0.902	0.902
SSQ29	0.890	50.280				
SSQ30	0.880	34.025				
SSQ31	0.876	38.114				
Service Quality						
SQ19	0.872	52.173	0.954	0.807	0.944	0.940
SQ20	0.911	49.664				
SQ21	0.899	64.376				
SQ22	0.920	72.182				
SQ23	0.891	47.286				
Learner Quality						
LQ32	0.906	65.799	0.936	0.748	0.923	0.915
LQ33	0.919	86.315				
LQ34	0.822	27.274				
LQ35	0.776	20.632				
LQ36	0.891	47.911				

Instructor Quality						
IQ37	0.870	31.836	0.956	0.813	0.943	0.942
IQ38	0.891	44.018				
IQ39	0.912	55.219				
IQ40	0.928	78.441				
IQ41	0.906	50.811				
Information Quality						
INQ12	0.764	17.239	0.905	0.577	0.884	0.878
INQ13	0.755	19.341				
INQ14	0.820	26.509				
INQ15	0.766	19.246				
INQ16	0.779	16.548				
INQ17	0.726	11.721				
INQ18	0.700	12.334				
Education System Quality						
ESQ24	0.877	46.685	0.939	0.794	0.914	0.914
ESQ25	0.875	48.333				
ESQ26	0.927	88.279				
ESQ27	0.885	38.419				

n=263

Survey Results (2020)

As the way first-order constructs were assessed for their validity and reliability, the constructs of second-order model were also evaluated for their dimensional properties. The Cronbach Alpha values of all latent variables range between 0.866 and 0.942. Henseler's rho values of these constructs range between 0.884 and 0.944. Further, the Composite Reliability of these constructs falls in between 0.905 and 0.956. For all measures of internal consistency, all constructs scored well above the threshold value of 0.7 as recommended by Nunally (1978). This indicates the high reliability of all second-order constructs.

Factor Loading and Average Variance Extracted (AVE) are considered standard measures of the convergent validity (Hair, et al., 2017; Byrne, 2016; Bagozzi, and Yi, 1998; Fronell, and Larcker, 1981). The AVE values of these constructs fall in between 0.534 and 0.813. Convergent validity of the constructs considered adequate when the AVE exceed 0.5 (Bagozzi, and Yi, 1998; Fronell, and Larcker, 1981). Additionally, factor loadings of latent variables those greater than 0.708 theorized to be explaining minimum 50% or more of the indicator's variance of it (Hair, et al., 2017). Here, the factor loadings of all

the indicators except U, TSQ1, TSQ10, TSQ2, and TSQ9 of the second-order model were between 0.700 and 0.941. Yet, U, TSQ1, TSQ10, TSQ2, and TSQ9 respectively loaded 0.537, 0.690, 0.635, 0.695, and 0.669 on their corresponding latent constructs. Based on Byrne's (2016) recommendation for factor loadings equal to or greater than 0.5, indicator U is accepted since the AVE value of the construct is greater than 0.5 (0.732). Further, the factor loadings equal to or greater than 0.6 can also be accepted, provided that the corresponding AVE value is greater than 0.5 (Byrne, 2016). The contributing AVE value of TSQ latent construct is 0.534. Accordingly, it is evidenced that the all constructs satisfy the convergent validity criterion. Next, the second-order constructs are examined for their discriminant validity. For an acceptable level of discriminant validity, Fronell, and Larcker,

(1981) recommended that the AVE of a latent variable should be higher than the squared correlations between the latent variables and all other variables (Chin, 2010; Chin, 1998b; Fronell, and Larcker, 1981). Table 4 demonstrates the correlation matrix with the square roots of AVEs on the diagonal line (in Bold) which indicates an acceptable level of discriminant validity according to Fronell, and Larcker criterion. Additionally, cross loadings are also used as a discriminant validity measure where it is expected for each indicator to load highest on the construct it is associated with (Henseler, et al., 2015; Voorhees, et al., 2016). Examination of loading of each indicator on its respective latent variable ensured that all are loaded highest on the latent variable for which they are assigned. Thus, all the constructs of second-order model confirmed to be holding acceptable level of discriminant validity.

**Table 4 : Correlation Matrix – Discriminant Validity of Second-Order Measurement Model**

		1	2	3	4	5	6	7	8
1	E-Learning System Success	<b>0.856</b>							
2	Education System Quality	0.749	<b>0.891</b>						
3	Information Quality	0.318	0.223	<b>0.759</b>					
4	Instructor Quality	0.844	0.727	0.252	<b>0.902</b>				
5	Learner	0.837	0.765	0.282	0.825	<b>0.865</b>			



	Quality								
6	Service Quality	0.723	0.689	0.136	0.723	0.689	<b>0.899</b>		
7	Support System Quality	0.809	0.741	0.258	0.794	0.771	0.727	<b>0.879</b>	
8	Technical System Quality	0.319	0.2	0.726	0.202	0.272	0.12	0.189	<b>0.731</b>

n=263

Survey Results (2020)

Once the properties of the measurement model are assessed for the reliability and validity, structural model is estimated to assess the effect size of the exogenous variable on the endogenous variable. Assessment of structural model usually involves assessing the path coefficients, assessing the collinearity, estimating the coefficient of determination, decide on effect size and test for predictive relevance of the model

(Hair, Hult, Ringle, and Sarstedt, 2014). Significance of path coefficient can be assessed using *P* value and *t*-value of the path. As such, path coefficients of those the *P* value is less than 0.05 (for 95% confidence level) and *t*-value greater than 1.96 (for 2-tailed test) are considered significant (Hair, et al., 2017). Bootstrapping of second-order model results that some paths are statistically significant while some doesn't (Table 5).

**Table 5 : Path Coefficients of Structural Model**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV)	P Values
Education System Quality -> E-Learning System Success					
	0.075	0.083	0.065	1.154	0.249
Information Quality -> E-Learning System Success					
	-0.01	-0.008	0.042	0.233	0.816
Instructor Quality -> E-Learning System Success					
	0.314	0.305	0.097	<b>3.248</b>	<b>0.001**</b>
Learner Quality -> E-Learning System Success					
	0.258	0.266	0.095	<b>2.704</b>	<b>0.007**</b>

Service Quality -> E-Learning System Success					
	0.099	0.094	0.045	<b>2.216</b>	<b>0.027*</b>
Support System Quality -> E-Learning System Success					
	<b>0.211</b>	0.207	0.066	<b>3.216</b>	<b>0.001**</b>
Technical System Quality -> E-Learning System Success					
	0.125	0.126	0.045	<b>2.791</b>	<b>0.005**</b>

\* $P > 0.05$ , \*\*  $P > 0.01$ ,  $n=263$ ,  
Survey Results (2020)

Except Education System Quality -> E-Learning System Success path ( $P = 0.249$ ,  $t$  value = 1.154) and Information Quality -> E-Learning System Success path ( $P = 0.816$ ,  $t$  value = 0.233) all other paths possess significant path coefficients, where  $P < 0.05$  and  $t$  value  $> 1.96$  (Hair, et al., 2017). The significant paths should be next assessed for their multicollinearity model (Hair, Hult, Ringle, and Sarstedt, 2014). Variance Inflation Factor of PLS

algorithm is used in deciding on the possible multicollinearity issues. As to Hair, et al., (2017) no multicollinearity will be presented if the VIF values are less than 5.0 (Hair, et al., 2017). VIF values of all the inner model constructs are well below the threshold value ( $< 5.0$ ). Hence, it is confirmed that the structural model constructs are free of multicollinearity problems (Table 6).

**Table 6 : VIF Values of Structural Model**

Construct	VIF
Education System Quality	2.959
Information Quality	2.208
Instructor Quality	4.144
Learner Quality	4.139
Service Quality	2.609
Support System Quality	3.612
Technical System Quality	2.171

$n=263$ ,  
Survey Results (2020)

Now the path significance is assessed and the absence of multicollinearity is ensured. Next coefficient of determination ( $R^2$ ) is examined to weight the explained variance. PLS algorithm of second-order model resulted in 0.817 of  $R^2$  value. Based on independent variables' ability to account 81.7% variance

of the dependent variable, it is concluded that there is a substantial level of influence by the E-Learning system qualities on the Success of E-Learning System (Hair, et al., 2017; Chin, 1998; Cohen, 1988). The above  $R^2$  value is depicted in the structural model of figure 3.

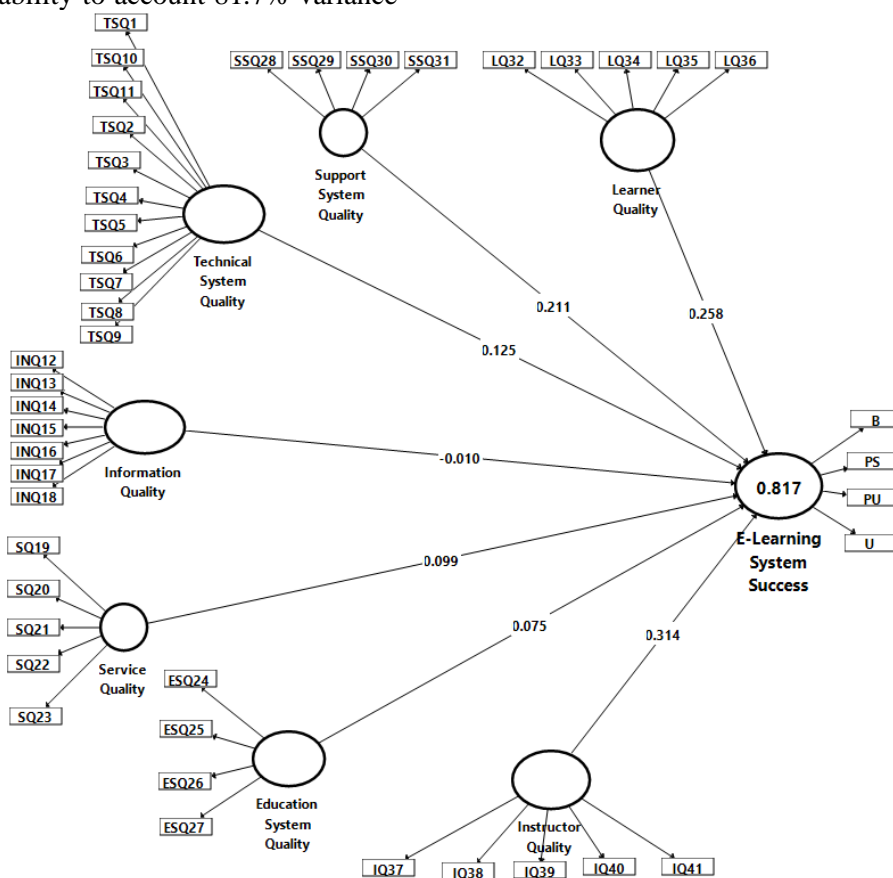


Figure 3 : Second-Order Structural Model

n=263,  
Survey Results (2020)

The effect size (f square) of PLS algorithm is the next measure of the structural model. The effect size is defined as “the increase in

$R^2$  relative to the proportion of variance of the endogenous latent variable that remains unexplained” (Cohen, 1988,

Henseler et al., 2009). As to Hair et al., (2017) and Cohen (1988), 0.35 –  $f^2$  value is regarded larger effect size, 0.15 -  $f^2$  value: medium effect size and 0.02  $f^2$

value equals to smaller effect size. Table 7 contains the effect size of corresponding latent constructs.

**Table 7: Effect Sizes ( $f^2$ ) of Structural Model**

	E-Learning System Success	Effect Size
Education System Quality	0.010	No
Information Quality	0.000	No
Instructor Quality	0.130	Small
Learner Quality	0.088	Small
Service Quality	0.021	Small
Support System Quality	0.067	Small
Technical System Quality	0.039	Small

n=263,  
Survey Results (2020)

Based on the decision criterion, Education system Quality and Information Quality appear not having any effect while other independent variables possess small effect size on the variance of  $R^2$  (Cohen, 1988, Henseler et al., 2009). Finally, the structural model is assessed for its predictive relevance via the blindfolding ( $q$  Square). Stone-Geisser Predictive relevance suggests that the  $Q^2$  value larger than 0 ( $0 <$ ) indicates that

exogenous constructs have predictive relevance over endogenous construct (Stone, 1974; Geisser, 1975; Hair, et al., 2017). The blindfolding of Construct Cross validated Redundancy results 0.579  $Q^2$  value which is well above the threshold value of 0. It implies that the E-learning system qualities have predictive relevance over E-Learning System Success.

#### 4. DISCUSSION

PLS-SEM results confirms 81.7% explanatory power of the predictor variables in explaining the variance of E-Learning Success. Further, Instructor Quality (0.314), Learner Quality (0.258), Support System Quality (0.211), Technical System Quality (0.125), and Service Quality (0.099), found significant in predicting the variance of E-Learning System Success. Yet, the tested data does not prove that the Educational Systems Quality and Information Quality can predict the E-Learning Success. Findings are partly consistent with the findings of Al-Fraihat et al. (2020), Mosakhani & Jamporzamey (2010), and Al-Fraihat et al. (2018) despite some anomalies are noted with respect to insignificant predictors namely; Educational Systems Quality (Kim, Trimi, Park, and Rhee, 2012; Mohammadi, 2015; Xing, Kim, and Goggins, 2015) and Information Quality (Klobas & McGill, 2010; Eom et al., 2012; Chen, 2010; Lwoga, 2014). E-learning system here has viewed as a triangular conception in which teacher (i.e. facilitator) and the learner interact with each other via a technical platform: the system. All the significant predictors to e-learning success found closely attached to either of these three pillars of an e-learning system. Hence, their power in affecting the success of e-learning system can be ramified. For instance, two

leading predictors, Instructor Quality and Learner Quality directly associated with two of three pillars. They represent the live components of E-learning systems who are the contributors and as well the beneficiaries of E-learning systems. Thus, it is inveterate that the instructors and learners to a greater extent should be responsible for success of the e-learning systems to which they are connected. Additionally, the rest of the significant predictors; Support System Quality, Technical System Quality, and Service Quality are elements of the other pillar; the technical platform. Hence, the results proved that the success of e-learning system in a way is a communal contribution of all three parties to the system. On contrary, the insignificant factors appear loosely connected with either of the three main components of the e-learning system. Thus, the findings are believed to be revealing the factuality of the presumed relationships. The implications flag that the organizations need to emphasize on creating learning opportunities, knowledge sharing, and tapping knowledge at both individual & corporate levels developing an e-learning culture in the process. Additionally, the study spotlighted the fact that even though global delivery of e-learning is highly talked about, the real potential of e-learning depends on the local environment

to a large extent (Ali, 2008). E-learning undoubtedly is a source of competitive advantage (Choudhury & Pattnaik, 2020). However, as pointed out in the paper, partners to the learning experience need to observe the changing dynamics of the learning environment and should follow an agile approach that enable adoption and diffusion of e-learning tools on a continuous basis.

## 5. CONCLUSION

Students today are exposing to different learning environments to gain the maximum value in learning experiences. Natural and man-made disasters such as COVID 19 pandemic, often threaten the continuation of physical learning experiences. This, together with many other socio economical drivers, have thrived the demand for e-learning. Every institution is unique and has its own strengths in conducting online courses. The essence of quality education, in any form, is to ensure that learning objectives are achieved efficiently and effectively, without sacrificing the standards of the educator and institution. Although recent attention has increased e-learning evaluation, the current research base for

evaluating e-learning is inadequate. Given the significance of the investments in implementing e-learning programs, the assessment of their success / effectiveness can't be misjudged (American Society for Training and Development, 2001). In that light, the present study contributes to the existing body of knowledge of e-learning systems by proposing a new model of assessing the e-learning systems success. Findings confirms that the proposed model holds superficial capacity to predict the variances in e-learning system's success. The previous studies (Al-Fraihat, et. al., 2020) offer confirmation of the theoretical implications of the EESS model in the context of developing countries. Study supports the practical implication of ensuring not only the technical systems quality but also the instructor, learner, service, support system, and technical system in any attempt to enhance the success of e-learning systems (Abbasi et.al, 2020: Aboagye et.al, 2021: Ali et.al., 2018: Mtebe and Raphael, 2018). Future studies are invited in different research sites (e.g. state and private universities) with different methodological imperatives.

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## **Income Disparity among Urban and Rural Community in Sri Lanka**

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### **Abstract**

Income disparity is considered as a global problem, with significant manifestations in the Sri Lankan context. This research investigates the income disparities between urban and rural populations in Sri Lanka. The objective is to investigate the degree of income inequality within and between sectors. The survey included 166 households. Since the study compared urban and rural communities, the same sample size was taken from both sectors. The study was carried out using multiple linear regression, with the Gini coefficient and Lorenz curve used to determine the degree of inequalities. According to the study's findings, the composite assessment of income disparities across sectors accounted for 0.25 Gini coefficient. According to the study, rural families' breadwinners should be financially supported. In order to reduce the degree of inequality, the government should take steps to improve rural infrastructure, schooling, and health care at a pace comparable to that of the urban sector.

**Keywords:-** Income disparity, urban, rural, Gini coefficient

### **1. INTRODUCTION**

Economic inequality is considered multi-dimensional; income, consumption and wealth. The difference identified between different groups of people in different levels of income earned and overall standards of well-being refers to income disparity (Kyroglou, 2017). On the other hand income inequality is created because of rising inequality in

wages and salaries, within high and low skilled workers, between developed and developing countries as well as between different groups of people (Piketty, 2014). These different groups may refer to whole countries, or local groups, national or regional groups or else individuals (Atkinson, 2015). Most of the time income disparity is used as a well-being indicator

or an economic indicator within the countries (Kyroglou, 2017). There are many reasons for income disparity mentioned by some researchers. One of the reason is the earning gaps between high skilled and low skilled groups and among developed and developing countries (Piketty, 2014). The emerging of urbanization, globalization and higher automation of business activities in the present has created a gap between wages and salaries and excessive skills are required to earn high salary are some more reasons (Navarro, 2007). In rural areas less access to public goods, good education, infrastructure, high job opportunities and some other geographically related factors may generate lower returns and welfare to poor groups (De Silva, 2013).

Wilkinson and Pickett (2009) showed that there are some important consequences and social implications of income disparity. Recent data reveals that many additional societal issues, such as mental illness, violence, lack of trust, adolescent births, obesity, drug misuse, and low scholastic achievement of students, are more frequent in more unequal countries. According to certain academic literature income disparity affects growth negatively (Shantha & Ali 2013b). Inequality limits investment possibilities, diminishes borrower incentives, slows growth by boosting fertility

rates, and causes macroeconomic volatility (Atkinson & Morelli, 2011). Consumers of middle and low class lapse behind in terms of confidence and status and consumers attempt to compensate for the damage by consuming beyond their abilities. Therefore, these two classes get into debt, and this may ultimately causes their purchasing ability to drop substantially further, and also affects the economy negatively (Atkinson & Morelli, 2011). Researchers had found that income inequality include some consequences such as, higher rates of social problems, health problems, low level of social benefits, lower population happiness and satisfaction and even lower level of growth in the economy (Wilkinson & Pickett, 2009; Yang, 1999; De Silva, 2013).

Reducing disparity is one of the most important step that countries can take to increase community well-being, distribute people's incomes fairly and increase the country's overall economic growth (Asad & Ahmad, 2011). Therefore, eradicating inequality in Sri Lanka at microeconomic level would reduce excessive health spending and increase educational performance of the poor. At macroeconomic aspect reducing disparity would increase growth and build a stabilized economy (De Silva 2013).

In Sri Lanka, there are three sectors in the country as, urban, rural and estate. For this study urban and rural sectors are considered. Some researchers define urban areas or urbanization as it is not just the change of land use, but also the changes in socio-economic aspects (eg ; income levels, educational standards, job opportunities and population) (Madsen, Kristensen , Fertner, Busck & Jorgensen, 2010). According to the Household Income and Expenditure Survey report 2016 in Sri Lanka, urban areas are defined as areas which are governed by Municipal councils (MC) or urban councils (UC). Areas which are far away from urban influence can be categorized as traditional rural areas with low population density, low income level and a high degree of primary production (Madsen et al., 2010). According to Menike (2015) study shows that a wide unbalanced difference in advancement between the country's rural and urban sectors could be well identified. Therefore a reasonable disparity can be seen in between these two sectors.

This study mainly examine the degree of income disparity between urban and rural community in Sri Lanka following with some sub objectives; to identify the household income differences and to identify the factors that

impact on income disparity. Though there are number of studies that have examined about income disparity around the world, but it is difficult to find empirical and theoretical research studies carried out for the Sri Lankan economy. Thus there exists a clear literature gap in Sri Lanka, therefore this study will be useful for further implications.

### **1.1 Problem statement**

Most of the studies had limited their studies to analyze one dimension. But studying two or three dimensions broaden, deepen and expand the understanding and evaluation of disparity (Fisher, Johnson, Smeeding & Thompson, 2017). Income disparity is generating consequences and social implications between different groups. The high inequality level within a country generally shows high levels of crimes and social insecurity, especially for lower income people. Compared to higher income people, lower income groups face high level of injustice (Wilkinson & Pickett, 2009). Disparity in income can be identified between same group, different groups or countries in different periods of time (Lambert & Aronson, 1993). Sapolsky (2005) mentioned that countries with high income inequality is associated with health care problems such as, only the high income groups can access to healthcare services and



therefore, low income groups are facing more health problems. As already mentioned countries with high income disparities face important social problems, with unrest, social instability and crime at the frontline and all of those weaken the social instability or cohesion of a country (Wilkinson & Pickett, 2009).

Disparity in income, in economic context undermines aggregate demand for goods and services. Therefore, it affects consumption negatively. Furthermore, the disparity in income is related with high level of unemployment causing more household debt (Quintana & Royuela, 2012). However, globally disparity in income is a major issue which should be concerned more. Many countries failed to reduce income inequality within country and therefore this inequality benefit wealthy and hurts poor (Atkinson & Morelli, 2011). In the world many developed as well as developing countries are experiencing increases in inequality within country since 1980s. The expanding of income disparity has gone hand in hand with the period of increasing countries exposure to globalization via cross border flows of goods, services, capital and labour.

In developed countries, earnings inequality, differences in

educational level has created the disparity in income with increasing inequality. And in developing countries, according to the Kuznets identified that people shiftment to modern activities from traditional has been an important reason for inverted U relationship within development and inequality. Therefore developing countries account for larger amount of disparity than developed countries (Arun & Boroah, 2004; Katz & Murphy, 1992). United States along with UK and rich OECD (Organization for Economic Co-operation and Development) countries features the highest level of disparity in income and faced to the highest growth in disparities (Neckerman & Torche, 2007; Smeeding, 2005). Wodon and Yitzhaki (2002) stated higher level of disparity may lead to poverty within the country. The share of the benefits of the poor may reduce due to high inequality.

The concept of inequality has a direct and negative impact on social welfare. Considering Sri Lanka, government has provided access to basic social services and facilities to most of the sectors and regions. Despite that gains and benefits are largely limited to Colombo and closer by districts. The regions that are far away from Colombo, shows poor facilities, opportunities than areas closer to Colombo. Although, Sri Lanka has been recording

moderate economic growth during a certain period still inequality exists in the country (Kumara, 2012). A significant gap can be seen between urban and rural community in many ways such as, communication barriers, quality of education, geographical aspects, opportunities and many more (De Silva, 2013; Menike, 2015; Kumara, 2012).

In Sri Lanka there are limited number of research that focus on either income or consumption inequality. Though there are number of studies that have examined about income disparity around the world, but it is difficult to find empirical studies carried out for the Sri Lankan economy. Thus there exists a clear literature gap in Sri Lanka regarding a comparison between these two sectors using income disparity. In Sri Lanka according to the latest Household Income and Expenditure survey data, the richest 20% of the country receives nearly 51% of the Sri Lanka total income and 5% was distributed among the 20% of the poorest (HIES Report, 2016). Therefore this study examine the income gaps between urban and rural community and this study will be useful for further implications regarding this problem in the country.

Therefore this research study investigates the problems of

whether **“there is an income disparity among urban and rural community in Sri Lanka and what key determinants that affects income disparity?”**

The main objective of the study is to explore the degree of income disparity within and between sectors. Specific objectives of the study are, to investigate the disparities in income levels between the urban and rural communities in Sri Lanka and identify the determinants of income disparity in rural and urban settings of Sri Lanka.

## **1.2 Literature review and hypotheses**

Consequently, income inequality refers to the difference in income distribution (OECD, 2015). The study of income disparity has a rich history, going back to the classical school of economics and the studies of prominent classical economists including Adam Smith and David Ricardo. For Adam Smith a society of which the bulk of its members are disadvantaged cannot reach high growth rates (Atkinson, 1997). Income disparity can be observed as one of the dimensions of disparity (Wilkinson & Piketty, 2009; Kawachi, Kennedy, Lochner & Prothrow-Stith, 1997; Babones, 2008). Kyroglou (2017) mentioned income disparity may be observed between the same groups or nations in various

historic periods, taking into account the variations in economic patterns that people have adopted overtime. Base on economic context, income disparity reduces aggregate demand for goods and services, adversely impacting consumption as well (Quintana & Royuela, 2012). Numerous measures of inequality will not rely on absolute degree of well-being attained in the society. In other words, income disparity measures generally do not rely on the mean income estimated in a country. This is also common for two countries, one very wealthy and one very poor, to have the same degree of income disparity (Wodon & Yizhaki, 2002).

Wodon and Yizhaki (2002) mentioned that individuals and household should not only evaluate their level of welfare in terms their actual levels of income and expenditure, they even distinguish themselves with each other. Therefore, every given amount income in a region high inequality has a clear negative impact on welfare. As well as inequality interacts with disparities in well-being between households (or individuals) and not with the degree of well-being attained by those households. Disparity and poverty are definitely among the key problems of developing world. Combat against inequality and power are main priorities of the developing world. The issues of global inequality are highly

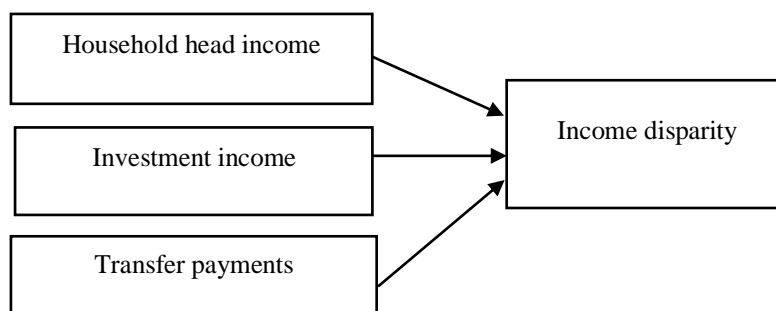
significant, but it is still a primary local concern. Because people are particularly bothered about disparity within their country. So policies are aimed at minimizing disparity around people inside national boundaries (Alvaredo & Gasparini, 2013).

Rising inequality in wages and salaries, within high and low skilled workers, between developed and developing countries as well as between different groups of people creates disparity (Piketty, 2014). These different groups may be refer to whole countries, or local groups, national or regional groups or else individuals (Atkinson, 2015). Most of the time income disparity is used as a well-being indicator or an economic indicator within the countries (Kyroglou, 2017). Wilkinson and Pickett (2009) showed that there are some important consequences and social implications of income disparity. Researchers had found that income inequality include some consequences such as, higher rates of social problems, health problems, low level of social benefits, lower population happiness and satisfaction and even lower level of growth in the economy. The high inequality level within a country generally shows high levels of crimes and social insecurity, especially for lower income people. Compared to higher income people, lower income groups face high level of injustice. Countries with high

income inequality is associated with health care problems such as, only the high income groups can access to healthcare services and therefore, low income groups are facing more health problems. As already mentioned countries with high income disparities face important social problems, with unrest, social instability and crime at the frontline and all of those weaken the social instability or cohesion of a country (Wilkinson & Pickett, 2009).

Income disparity can be measured using household disposable income and it includes wages, salaries asset income and transfer income (Ravallion & Chen, 2011). The sum of household earnings, transfer payments, pension benefits,

capital income and income from financial assets and social security contributions are components of disposable income (Japelli & Pistaferri, 2009). In this study the sum of wages and salaries and self-employment income is known as earnings of an individual. Labour income includes wages, salaries, bonuses, non-labour income and capital income consists of rent, dividends, interest, business profits, capital gains and other income from owning assets. But disposable income is known as income after taxes and government transfers. Wealth is considered as a stock. The wealth is identified as the sum of financial and non-financial assets and net financial liabilities. It refers to the overall capital owned at a given point in time.



**Figure 1: Conceptual framework**

**H1:** There is a significant relationship between household income and employment earnings of household head.

In this study the sum of wages and salaries and self-employment income is known as earnings of an individual. Piketty and Saize

(2014) stated that income is a flow variable. Household heads income consists of employment income (wages, salaries, allowances, bonuses,) seasonal agricultural income (paddy, onions etc.) other agricultural income (tea, rubber, coconut, egg and etc.) non-agricultural income (hotels, mining, transport) (Arun & Borooah, 2004; Heathcote, Perri & Violante, 2009).

**H2:** There is a significant relationship between household income and investment income.

Labour income includes wages, salaries, bonuses, non-labour income and capital income consists of rent, dividends, interest, business profits, capital gains and other income from owning assets. People holds

various kind of assets which generates income out of them (Ravallion & Chen, 2011; Japelli & Pistaferri, 2009; Piketty & Saize, 2014).

**H3:** There is a significant relationship between household income and transfer payments.

The sum of household earnings, transfer payments, capital income and income from financial assets and social security contributions are components of disposable income (Japelli & Pistaferri, 2009). Transfer payments include, pension benefits, disability payments, government transfers etc. (Ravallion & Chen, 2011; Piketty & Saize, 2014; Menike, 2015); Arun & Borooah, 2004).

## 2. METHODS

**Table 1: Operationalization of variables**

Determinants/Indicators	Variables or Dimensions	Author
Employment earnings	Wages, salaries, seasonal agricultural income (paddy, onions etc.) other agricultural income (tea, rubber, coconut, egg, and etc.) non-agricultural income (hotels, mining, transport)	Ravallion & Chen (2011); Japelli & Pistaferri (2009); Piketty & Saize (2014); Menike (2015); Arun & Borooah (2004); Heathcote et al., (2009)
Investment income	Financial assets, Property income, dividends	Ravallion & Chen (2011); Japelli & Pistaferri (2009);

		Piketty & Saize (2014); Menike (2015); Arun & Borooah (2004); Heathcote et al., (2009)
Transfer payments/cash receipts	Government transfers, pension payments, foreign remittances	Ravallion & Chen (2011); Piketty & Saize (2014); Menike (2015); Arun & Borooah (2004); Heathcote et al., (2009)

Source: Researchers' findings, 2020

## 2.1 Research approach

In here the study obtained cross-sectional approach. This approach involves the collection of information about some aspect of the phenomena of the present situation. There are mainly another two ways of conducting a research; such as, qualitative approach and quantitative approach. For this study quantitative approach is used. To achieve the objectives of the study a questionnaire was used to obtain the needed data and views of the participants.

## 2.2 Population

Population refers to all the items or people in a group which the researcher expected to examine. As this study is mainly exploring the consumption and income disparity among urban and rural community, the household units

will be considered as the population. For this study 36,092 households under Negombo Municipal Council and 16,880 households under Imbulpe Pradeshiya Sabha was decided. Therefore, altogether 52,972 household units in both areas was selected as the total population in this study.

## 2.3 Sample

The Multi-stage cluster sampling method was used to select participants for the study, the reason that it is a type of sampling which involves dividing the population into groups. Equally 3 GN divisions from each local authority was selected to the sample frame. Under Negombo Municipal Council, 3353 households were chosen from Bolawalana, Periyamulla and Angurukaramulla GN divisions. As well as under Imbulpe Pradeshiya Sabha, 899

households were selected for the sample frame respectively from Muttettuwegama, Karagasthalawa and Kinchigune GN divisions. The participants of

the study was household heads who were above 20 years old. 166 households was taken as the sample, 83 from both areas.

**Table 2: Sample selection**

GN division	Population	Sample
<b>Negombo Municipal Council</b>		
Bolawalana	1435	36
Periyamulla	911	24
Angurukaramulla	1007	23
<b>Imbulpe Pradeshiya Sabha</b>		
Muttettuwegama	505	46
Karagasthalawa	239	22
Kinchigune	155	15
<b>Total</b>	<b>4252</b>	<b>166</b>

Source: Survey findings, 2020

## 2.4 Data collection

This research mainly depends on primary data that was collected by the researcher. For this study data was collected through a survey and a face to face interview. A Structured questionnaire was used for the process of data collection.

## 2.5 Method of analysis

Main objective of the study is to identify income disparity among urban and rural communities in

Sri Lanka. There are number of measures used to calculate inequality; Gini coefficient, Lorenz curve, Theil's index, Atkinson index, Relative mean deviation and Coefficient of variation etc. For this study Gini coefficient and Lorenz curve was used. Gini coefficient is the most widely used indicator of disparity due to its desirable properties that guide the policy analysis. As well as Gini coefficient is also a solely mathematical indicator of uncertainty and a standard measure of inequality. The

graphical representation of Gini coefficient is the Lorenz curve. To explore the factors affecting income disparity multiple linear regression model was utilized. Multiple regression analysis is used when there is more than 2 independent variables. The significance level of the  $\beta$  coefficients are checked using the P values and the R square value was used to express the goodness of fit of the model. ANOVA table was used to test the overall significance level of the model. The Pearson correlation analysis and ANOVA table was used to explain the relationship between continuous and continuous variables and categorical variables with continuous variable. Only the independent variables which have a significant relationship was taken to the analysis. The normality distribution of the dependent variable were analyzed using Kolmogorov-Smirnov test.

### 3. RESULTS

#### 3.1 Inequality analysis

According to this analysis regarding the rural sector the income inequality Gini coefficient is 0.20. Therefore, there is a disparity between rural household incomes. But the value is close to zero because the income variation among households were not so large. According to the field data obtained most of them were

engaged in normal jobs such as, three-wheel drivers, security officers and laborers'. So the individual level of income does not express a huge variation.

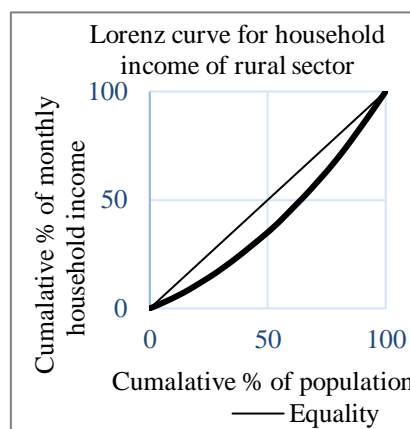


Figure 2: Lorenz curve

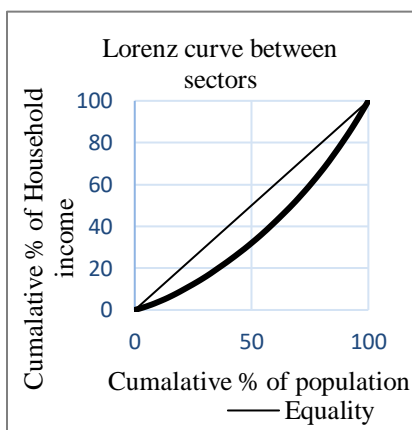
Source: Survey findings, 2020

Lorenz curve is away from the 45° line of equality. Therefore, income disparity can be seen among the group. According to the graph poorest 20% of the population receives 11% of the total income, the richest 20% of the population receives almost 30% of the total income and the middle 60% of the population receives 59% of the total income.

According to the analysis of the urban sector the income inequality Gini coefficient is 0.17. Therefore, there is a disparity between household income levels in urban sector. But the value is close to zero because the income variation among households were not so



large. According to the field data obtained most of them were engaged in professional jobs such as, managers, engineers etc. and most of them were businessmen. So the income levels does not express a huge variation.



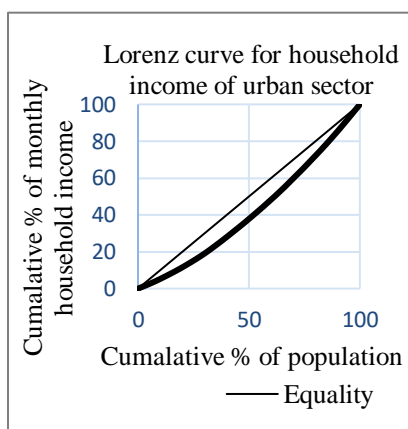
**Figure 3: Lorenz curve**  
Source: Survey findings, 2020

According to the graph 20% of the population received 12% of the total income, the richest 20% of the population receives almost 27% of the total income and the middle 60% of the population receives 61% of the total income.

According to this analysis the income inequality Gini coefficient is 0.25. Therefore, there is a disparity between urban and rural community. The disparity level is higher than the disparity levels when the two groups are separately analyzed. The reasons for that can be, high

income variation between groups and various jobs (More professionals in urban sector).

The graph explains that poorest 20% of the population receives 9% of the total income, the richest 20% of the population receives almost 34% of the total income and the middle 60% of the population receives 57% of the total income.



**Figure 4: Lorenz curve**  
Source: Survey findings, 2020

**Table 3: Income shared among groups**

Group	% of Income share		
	Poorest 20%	Middle 60%	Richest 20%
Rural	11	59	30
Urban	12	61	27
Pooled	9	57	34

Source: Survey Findings, 2020

### 3.2 Regression analysis

The Model A will be rural consumption disparity and Model B will be urban consumption disparity. But before conducting the regression analysis the OLS assumptions must be fulfilled. Therefore, the researcher first tested the normality of the dependent variable based on the Kolmogorov-Smirnov test. The P values are greater than 0.05 significance level ( $0.182 > 0.05$ ,  $0.077 > 0.05$ ) respectively in both models, that means the dependent variable is normally distributed in both the models.

If variance inflation factor (VIF) value is greater than 10 and if the Tolerance value is less than 1, it indicates that there is a multicollinearity situation. In here all the values does not exceed VIF value 10 and the

Tolerance value is more than 1. It indicates that there is no multicollinearity problem in both models.

Finally, the researcher should select the appropriate independent variables to the regression model.

For the both models there were continuous as well as categorical independent variables. Therefore, to check the relationship between continuous dependent variable and categorical independent variables used ANOVA test. On the other hand, to check the association between continuous dependent variable and continuous independent variables used Pearson correlation technique. The multiple linear regression model was conducted using the appropriate variables as below.

**Table 4: Multiple linear regression model**

	$\beta$	Std.error	t	Sig
Constant	17943.99	3055.61	5.872	0.000
Household Head income	0.637	0.070	8.996	0.000
Transfer payment	0.232	0.144	1.610	0.111
Investment income	0.461	0.300	1.537	0.128

Source: Survey Findings, 2020

In the rural model all the independent variables have a positive relationship to the dependent variable. But only household head income variable was significant. The investment income and the transfer payment variables were not significant. There were only 10 households who has an income from investments such as, boarding fees and rent from some properties. When all the independent variables remaining constant, the household income is 17943.998 rupees. When all the other variables held constant, a rupee change in household head income, increase the household income by 0.637 rupees. When all the other variables held

constant, if transfer payment income is increased by one rupee, the household income increased by 0.232 rupees. When other variables held constant, if the investment income increased by one rupee, the household income increased by 0.461 rupees.

R square indicates that the proportion of variance in the dependent variable that can be explained by the independent variables. According to the results of the model summary, the adjusted R square of the study is 55.2% and it reveals that 55.2% of the data fit the regression model. Therefore, the researcher identified that the fitted model is good one.

**Table 5: Multiple linear regression model**

	$\beta$	Std.error	t	Sig
Constant	57259.180	5594.824	10.234	0.000
Household Head income	0.366	0.066	5.576	0.000
Transfer payment	-0.463	0.173	-2.672	0.009
Investment income	0.343	0.210	1.631	0.107

Source: Survey findings, 2020

In the urban model all the independent variables have a positive relationship to the dependent variable except the transfer payment variable. The household head income as well as transfer payment variables have a significant relationship with the

dependent variable. The investment income variables was not significant.

When all the independent variables remained constant, the household income is 57,259.180 rupees. When all the other variables held constant, a rupee

change in household head income, increase the household income by 0.366 rupees. When all the other variables held constant, if transfer payment income is increased by one rupee, the household income decreased by 0.463 rupees. When all the other variables held constant, if the investment income increased by one rupee, the household income increased by 0.343 rupees.

R square indicates that the proportion of variance in the dependent variable that can be explained by the independent variables. According to the results of the model summary, the adjusted R square of the study is 40.9% and it reveals that 40.9% of the data fit the regression model. Therefore, the researcher identified that the fitted model is good one.

#### 4. DISCUSSION

Income disparity has been a world-wide problem. According to empirical results of Asad and Ahmad (2011) found that rural inequality was increasing and urban inequality was decreasing over the period. In this study also revealed that the income disparity level individually of the rural and urban sector was 0.20 and 0.17 respectively. Therefore, the within group inequality was lower than between group inequality. According to the analysis in the both the sectors

income variation within their own sector was very low. Regarding the field data obtained from rural sector, most of them were laborers, three-wheel drivers or security officers. So, the income level between them does not express a huge variation. Out of the 83 households in the sample, most of them belongs to the group of non-agricultural activity earnings. Households in the urban sector were engaged in professional jobs and business activities. The Gini coefficient value for between group income disparities was 0.25. The disparity level is higher than the disparity levels when the two groups are observed individually. The reasons for a high Gini coefficient might be high variation of the income between groups, various job opportunities for the urban sector than the rural, technology, urbanization level and the education level of the urban people. The research findings released in 2011 by Pavcnik under the topic globalization and within-country income inequality realize that literature on globalization and disparity focuses on indices of discrimination that reflect income inequality between people across education, business and their job categories

Current regression on the income disparity models shows that not the same variables are significant in both models: Regarding the rural sector transfer payments and investment income variables

were not significant and in the urban sector the investment income variable was not significant. This might be because of the collected data might be not enough or sometimes accurate data was not given by the households. In the rural sector there were only 10 people out of 83 has investment income. Sometimes the collected data might not be enough to obtain a more precise answer. In line with literature, Arun and Borooah (2004) examined the wage in equality in Sri Lanka. According to the reporting's of their analysis disparity in the distribution of investment income records 0.579 Gini coefficient which was greater than the inequality of distribution of employment earnings Gini coefficient 0.437.

In addition to this regarding the rural sector most of them mentioned, that during the COVID- 19 situation they had a very hard life. Some people have lost the main income earning source such as small found cabins retail shops because they could not pay the rent on it. This data was collected for the month of August, and they were still re-building their ways of income. The impact covid-19 was a huge burden on their lives compared to urban households because most of the urban people has a permanent job for their own.

## 5. CONCLUSION

The breadwinners of the rural households need a permanent employment. Therefore, the researcher recommend that the government can take steps to develop small businesses in the area such as, new handy craft, clay products and bathik products. It will be an opportunity to them to increase their income levels. Proper training and financial assessments must be given by the government. This will be an opportunity for the households to be a part of national production. As a country we can increase our export capacity and this will be a way to attract more tourists to Sri Lanka. The infrastructure level of the area must be more developed. Government should take necessary steps to improve the infrastructure level in the area. A safe drinking water facility should be provided and a well-organized health services and clinical care must be provided. The lack of proper hospital facility is a major problem to them.

In order to reduce the disparity following policy implications are proposed by the researcher. Rural development bank can provide more financial assistance to the small scale business people to strengthen their businesses. In addition to that all other financial authorities can introduce more opportunities to people to start new businesses and give hand to

their new innovations. The Ministry of Industries, and take steps to generate new business opportunities for the rural community. In addition to that, proper training and awareness should be given to those people. The rural area which was selected to the survey is highly attracted area by local and foreign tourists. Therefore, to strengthen the low income families the relevant authorities can take steps. Specially, by implementing new business opportunities related to handy crafts, bathik and local food stalls. In many occasions the rural community have to face many difficulties regarding basic facilities. The relevant authorities must take steps to provide the basic needed facilities and maintain the ones that are already been disrupted.

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## **Factors Determining Social Media Marketing Adoption of Micro, Small and Medium Enterprises (MSMEs) in the Northern Province, Sri Lanka**

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### **Abstract**

MSMEs are the backbone of any nation. After the end of the civil war in 2009, people from the Northern Province of Sri Lanka started MSMEs, and that should be run on the virtual market and the physical market for business survival. This study explores the factors determining social media marketing adoption by MSMEs in the Northern Province of Sri Lanka. In this study, data were collected from 10 owners or managers of MSMEs in the research area using multiple case study-based qualitative methods of in-depth interviews. The research samples were selected using the purposive sampling technique. There were 12 factors explored such as perceived ease of use, internal and external influencers, technological factors, external institutional pressures, business sustenance, usage of smartphones, observability of market happenings, links among social media platforms, unique features, two-sided benefits, two-way cost reduction and new normal context as findings of the study.

**Keywords:-** Micro Small and Medium Enterprises (MSMEs), Social Media, Social Media Marketing Adoption, The Northern Province of Sri Lanka.

## 1. INTRODUCTION

In today's business world, Micro, Small and Medium Enterprises (MSMEs) have become more vital than large scale enterprises in both developed and developing countries. Gamage (2003) stated that the developing countries are promoted due to the SME sector's contributions such as the contributions to employment generation, domestic saving mobilization, poverty alleviation, income distribution, regional development and stimulation of other economic activities.

Organizations in almost all sectors have started to explore digital technologies and enjoy their advantages. Matt, Hess & Benlian (2015) stated that the adoption of digital technologies has an impact on an organization's processes, marketing channels and production chains. Enterprises under the SME sector can benefit at every stage of their business from the adoption of technological innovations in terms of competitive standing, access to the global market (Rassool & Dissanayake, 2019), communication and exchange of information with stakeholders (Ensari & Karabay, 2014) and payment systems (Acar, Koçak, Sey & Arditi, 2005).

Although the revolution of internet and communication technologies have changed the

way of doing business on virtual platforms, businesses under the SME sector have more barriers to adopt new technology (Dahnil, Marzuki, Langgat & Fabeil, 2014) in terms of poor financial capability, limited human resources, lack of organizational resources and poor technical knowledge of employees (Beier & Wagner, 2016; Gamage, 2003; Mustafa & Yaakub, 2018; Zaied, 2012.). Though MSMEs have technology adoption barriers, social media as an emerging new marketing strategic tool can be deployed by MSMEs due to its low cost (Michaelidou, Siamagka & Christodoulides, 2011) and minimal technical requirements (Ferrer, Bousoño, Jorge, Lora, Miranda & Natalizio, 2013).

### 1.1. Background of the study

Sri Lanka was facing 30 years of well-documented ethnic crisis which resulted in a civil war. After the end of a 30-year civil war, Sri Lanka is on the path to revitalizing its economy. In this endeavour, the SME sector has been playing a crucial role in contributing to the country's economic development (World Bank Group, 2011). In Sri Lanka, the SME sector includes Micro, Small and Medium Enterprises (MSMEs) and it is estimated that more than 90% of businesses fall under the SME Sector, which contributes 52% to the GDP and provides 45% of total

employment in the country (Ministry of Industry and Commerce, 2016). Moreover, about 2.25 million people in Sri Lanka, are employed by MSMEs (Gunawardana, 2016).

The Northern Province of Sri Lanka was affected severely compared to other parts of Sri Lanka due to the civil war. After that prevailed a pathetic situation which had come to end in 2009, and vulnerable people who were in the North part of Sri Lanka, started micro, small and medium scale businesses mainly for their daily livelihood. Although MSMEs in the Northern Province have been progressively developing their businesses gradually, due to the COVID-19 outbreak, they have become vulnerable.

Although the SME sector plays a vital role as an economic growth engine of Sri Lanka, there is a burning issue that lack of adoption or obsolete or inappropriate usage of technology that results in low productivity in the business (Gamage, 2003; Kapurubandara & Lawson, 2006; Samsudeen et al., 2021). Therefore, this impelled the MSMEs in Sri Lanka to embark on adopting technological innovations for communicating with stakeholders and doing business with existing and potential customers. In this regard, these SMEs may adopt social media marketing. Therefore, deciding on adopting

social media marketing would be a wise decision. However, the studies related to technology adoption including social media marketing adoption by MSMEs lack in Sri Lanka. Rasool & Dissanayake (2019) have reviewed journal articles and industry publications to identify key factors for MSMEs in Sri Lanka in transforming businesses into digital.

Many studies have attempted to examine the factors affecting Technological adoptions (Morgan, Colebourne & Thomas, 2006; Rahman, Taghizadeh, Ramayah & Alam, 2017) from the organizational point of view as well as the consumers' point of view (Abed, Dwivedi & Williams, 2016). Yet only a few studies have focused on social media marketing adoption (Dahnil et al., 2014). Further, most studies were conducted in developed countries (Ainin, Parveen, Moghavvemi, Jaafar & Shuib, 2015; Wamba & Carter, 2016) not in developing economies and based on large organizations (McCann & Barlow, 2015) but not on SMEs (Wamba & Carter, 2016).

So far a limited number of researches are available in the contexts of SMEs, facing COVID-19 pandemic issues and social media marketing adoption (Effendi, Sugandini & Istanto, 2020). Hitherto, little notable researches have been done by academics on social media

marketing adoption by MSMEs in the Sri Lankan context explicitly (Pemarathna, 2019).

In line with the above discussions, the MSME related applied oriented and outcome-based researches in the context of technology adoption including social media marketing adoption lack in Sri Lanka. Therefore, it is intended to conduct this study by focusing on determining factors that may influence the adoption of social media marketing.

In addition, a pilot study was conducted by using an in-depth interview with four experts who are senior academics who have completed PhD in SME development, a well-tenured owner of an SME, an expert from the Department of Industries and an expert from the Industrial Development Board (IDB) to ensure whether the research problem of this study is existing and to be solved in the Northern Province of Sri Lanka. According to the in-depth interview with the experts, it was found that MSMEs in the Northern Province of Sri Lanka have little or no awareness of social media marketing adoption. The experts further continued that a solution to the MSMEs for the problem of less attention on adapting social media marketing has to be resolved through researches. In this manner, as an initial stage, exploring the determining factors of social media marketing adoption for SMEs in the

Northern province of Sri Lanka is necessary.

In the light of the research problem identified by the researcher and through the pilot study, this study aims at answering the research question “What are the factors determining social media marketing adoption of MSMEs in the Northern Province of Sri Lanka?”.

This study has the potential to make a valuable contribution by pursuing a holistic attempt to explore the factors which might influence the adoption of social media marketing in the SME context with a special reference to the Northern province, Sri Lanka.

Also, this research would be helpful for the policymakers to develop strategies to enhance the rate of social media marketing adoption among SMEs. Moreover, SMEs can get a strategic idea in adopting social media marketing to deal with the consequences of extreme events such as the COVID-19 outbreak.

## **1.2. Research objectives**

This study seeks to achieve the following research objectives:

1. To identify the factors determining social media marketing adoption of MSMEs in the Northern Province of Sri Lanka

from the theories and previous studies.

2. To explore the context-specific factors determining social media marketing adoption of MSMEs in the Northern Province of Sri Lanka
3. To develop a modified theoretical model on factors determining social media marketing adoption.

### **1.3. Literature review**

#### **1.3.1. Social media and social media marketing**

Kaplan & Haenlein (2010) defined social media as “A group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and allow the creation and exchange of user-generated content”.

Dwivedi, Kapoor & Chen (2015) defined social media marketing as “a dialogue often triggered by consumers/ audiences, or a business/ product/services that circulate amongst the stated parties to set in motion a revealing communication on some promotional information so that it allows learning from one another’s use and experiences, eventually benefitting all the involved parties”.

#### **1.3.2. Micro Small and Medium Enterprises (MSMEs)**

The Micro, Small and Medium Enterprises (MSMEs) do not have a universally accepted definition (Mc Cartan-Quinn & Carson, 2003; Ramdani, Chevers & Williams, 2013; Wong, 2012) which is defined in different ways by countries, regions and institutions within countries (Gamage, 2003). Commonly used criteria to define SMEs are the total number of employees, total investment, annual return and balance sheet.

MSMEs in Sri Lanka is defined based on two criteria such as the total number of employees and the annual turnover. A micro-sized manufacturing enterprise is one with 10 or less than 10 employees and a turnover of Rs. 15 Mn or less than Rs.15 Mn. A small-sized manufacturing enterprise is one with 11- 50 employees and turnover from Rs. 16 Mn to Rs. 250 Mn and a medium-sized manufacturing enterprise is the one with 51-300 employees and the turnover from Rs.251 Mn to Rs.750 Mn. A micro-sized service providing enterprise is the one with 10 or less than 10 employees and the turnover of Rs. 15 Mn or less than Rs. 15 Mn, a small-sized service providing enterprise is the one with 11-50 employees and the turnover from Rs. 16 Mn to Rs. 250 Mn and a medium-sized service providing enterprise is the one with 51-200 employees and

the turnover between Rs. 251 Mn to Rs. 750 Mn (Gunawardana, 2016).

### **1.3.3. Adoption of technological innovations by SMEs during COVID-19 pandemic crisis**

The outbreak of COVID-19 has caused significant havoc to SMEs with adverse effects (Aladejebi, 2020; Humphries, Neilson & Ulysea, 2020; Liguori & Pittz, 2020; Okolocha, Okolocha & Ezejiofor, 2020; Omar, Ishak & Jusoh, 2020).

In the context of the COVID-19 outbreak, many types of research have revealed that the adoption of digital technologies plays an important role in responding to the new normal situation (Akpan, Udoh & Adebisi, 2020; Fitriasari, 2020; Guo, Yang, Huang & Guo, 2020 )

### **1.3.4. Theoretical background: factors influencing echnological Adoption Identifieda from theories / models**

Davis (1985) originally formulated the Technology Acceptance Model (TAM). TAM was formulated based on two constructs such as perceived ease of use and perceived usefulness (Davis, 1985), which can be used as determining factors of measuring users' behavioural intention in term of adopting a technology (Günther, Krasnova, Riehle & Schondienst, 2009)

The UTAUT2 model was formulated by Venkatesh, Thong & Xu in 2012. The UTAUT 2 model consists of seven factors such as performance expectancy, effort expectancy, social influence, facilitating conditions, price value, hedonic motivation and habit (Venkatesh et al., 2012) to determine the adoption of technology.

TOE framework was introduced by Tornatzky, Fleischer & Chakrabarti in 1990. TOE Framework consists of three constructs such as technological, organizational and environmental contexts to determine the adoption of technological innovation.

DiMaggio & Powell (1983) introduced Institutional Theory. DiMaggio & Powell (1983) identified three external institutional pressures such as coercive, mimetic and normative pressures which lead organizations to adopt processes, structures and strategies that others have already adopted, and thus, make them more similar (institutional isomorphism).

## **2. METHODS**

### **2.1. Research approach**

This study used an inductive approach as this study was conducted to explore factors determining social media marketing adoption in the context of SMEs.

## **2.2. Research strategy**

To conduct this study, the researcher decided that case study based qualitative data collection through in-depth interviews is more appropriate. A multiple case study investigating two or more cases gives more convincing and reliable empirical data (Eisenhardt & Graebner, 2007). Thus based on the multiple case study, this study selected 10 SMEs in the Northern Province of Sri Lanka.

## **2.3. Sampling**

The sample elements of this study are the owners or managers of SMEs in the Northern Province of Sri Lanka. Manufacturing, service providing and trading MSMEs in the Northern Province of Sri Lanka were selected as the sample unit. Under the non-probability sampling technique, the purposive sampling method was applied to select the respondents from the study population. The researcher has selected 10 cases (SMEs) in the Northern Province of Sri Lanka, holding positions such as owner or manager.

## **2.4. Time**

This study was conducted during the months from September 2020 to February 2021.

## **2.5. The research instrument**

A semi-structured interview is used in this study. Key questions

were made in advance to gain in-depth insight into the research area, and there were also some follow-up questions about interesting topics related to the research study when interviewing respondents.

## **2.6. Data collection and analysis**

In this study, primary data were used. The study was conducted in-depth with face to face and telephone interviews with respondents from SMEs in the Northern Province of Sri Lanka. Each interview took 45 minutes and was recorded and then transcribed, which contributed to a solid data collection for analysis.

The researcher has done thematic analysis to analyze the data in this study. NVivo software (version 10) as a data management tool, was chosen to conduct data analysis because it helps to graphically represent the relationships between codes (Weitzman, 2000).

## **3. RESULTS**

### **3.1 Respondents' Profile**

In this study, respondents who were either owner or manager category people were selected from different types of SMEs in the Northern Province of Sri Lanka.



**Table 1: Distribution of respondents (District Gender)**

District	Gender	
	Male	Female
Jaffna	1	2
Killinochchi	1	1
Mullaithevu	1	1
Vavuniya	1	1
Mannar	0	1
Total	4	6

There were 10 people selected as respondents of this study. According to the selection of respondents, almost equal number (1) of respondents were selected from males and females from each district except that one male and two females were selected from the Jaffna District and only one female was selected from Mannar District.

**Table 2: Distribution of respondents (position held)**

Gender	Positions	
	Owner/s	Manager/s
Male	3	1
Female	5	1
Total	8	2

According to the table, there were three males who held the position as owners and one male who held the position as a manager. Out of six females, five were owners and one was a manager. Therefore, among the selected respondents, social media marketing is handled mostly by the owners of SMEs.

### 3.2. Analysis of categories

Referring to the three research objectives, several questions were made, and answers of respondents were evaluated considering thematic analysis.

The first objective of the study is illustrated using four themes.

#### Theme 1: Perceived ease of use

In the interviews, participants often mentioned that “Easy to handle” is one of the reasons to adopt social media for accomplishing more of their marketing activities.

The followings quotations were said by the owners or managers of SMEs interviewed.

*“My employees are very supportive in social media marketing due to its simplicity. Moreover, as it is easy to operate social media, I can do the marketing myself without others’ help. [Respondent 7, Personal Interview, 2021]”*

*“When I started to market my products on social media platforms, I didn't know even how to create a business page on a social media platform. But now I feel that it is easy to handle” [Respondent 10, Personal Interview, 2021]*

She was the participant who spoke about retrieving customers' information at any time when required. This point is closely associated with perceived ease of use.

*“If the customers contact us through social media, their contact details can be recorded permanently and they can be contacted at any time” [Respondent 7, Personal Interview, 2021]*

A respondent told that due to the limited requirement of technical knowledge to handle social media, he has adopted social media marketing.

*“Even though my knowledge in social media technology is limited, I am not handicapped because my existing knowledge is sufficient to handle my business” [Respondent 5, Personal Interview, 2021]*

A respondent who was a SMEs' owner told that it was easy to become skilful at handling social media.

*“As it is easy to operate social media, I can do the marketing*

*myself without others' help” [Respondent 7, Personal Interview, 2021]*

When non-adopters are concerned, the reason for non-adoption is not “difficulty to use social media”.

*“I used a social media page a few years ago and felt that marketing through social media is cheaper and easier” [Respondent 1, Personal Interview, 2021]*

*“I didn't leave the social media, not because of difficulty in handling it but because of some others reasons” [Respondent 2, Personal Interview, 2021].*

## **Theme 2: Internal and external influencers**

Most of the participants of the study started their answers by stating the internal and external parties' influence on making them adopt social media marketing.

The following quotations are stated to substantiate this:

*“Customers, friends and society urged me often to post my products in the social media and reckon my business as high rated because of the social media” [Respondent5, Personal Interview, 2021]*

*“My employees share my posts on their personal social media pages to make me reach more” [Respondent 7, Personal*

*Interview, 2021]*

*“Some business consultants, experts and web designers, after observing me as an active marketer in the social media have come forward voluntarily to help me.” [Respondent 4, Personal Interview, 2021].*

### **Theme 3: Technological factors**

The majority of the respondents believe the security protocols in social media for conducting their marketing activities without fear. Moreover, they feel that if any risk comes in social media, it can be easily tackled.

Providing similar concern over security, a respondent who is an owner of an SME expressed as follows:

*“I have not faced any risks so far in social media marketing either in respect of job or technically” [Respondent 5, Personal Interview, 2021]*

A respondent told that she could adopt social media marketing with the available infrastructure with her.

*“No more additional infrastructure facilities that are available with me are required to market through social media” [Respondent 5, Personal Interview, 2021]*

Another respondent who was a non-adopter of social media marketing expressed his

viewpoint on why he didn't adopt social media marketing.

*“I thought that I have to invest more capital for infrastructure facilities to adopt social media marketing. I don't know how I can use social media with very few infrastructure facilities which are cost-effective” [Respondent 3, Personal Interview, 2021]*

### **Theme 4: External institutional pressure**

To adopt social media marketing, pressures may come from external institutions.

A response related to the external institutional pressure from a manager of an SME as follows:

*“My customers refer my pages often and remark that they hope to purchase more products of mine” [Respondent 5, Personal Interview, 2021]*

The second objective of the study is illustrated using eight themes as below:

### **Theme 5: Business sustenance**

In this study, most of the SMEs insisted that they have started to adopt social media marketing for their business continuity and they continued their talk about the business continuity issues due to the COVID-19 pandemic crisis.

There were four respondents (Respondent 6,7,9) who directly stated that they adopt social

media marketing for their business survival.

*“Customers view my products through social media and come home to purchase them. Thus my business goes on without any break” [Respondent 6, Personal Interview, 2021]*

*“If not for the social media, the businesses would have been closed due to COVID-19 pandemic crisis” [Respondent 7, Personal Interview, 2021]*

*“It is very difficult to carry products to supermarkets during COVID-19 and other shops. Thus social media plays an important role in sustaining my business” [Respondent 8, Personal Interview, 2021]*

*Business sustenance is possible through social media during this COVID-19 period. [Respondent 9, Personal Interview, 2021]*

#### **Theme 6: Usage of Smart Phones**

The usage of smartphones induced SMEs to adopt social media marketing to get various benefits.

The data given by a respondent related to the usage of smartphone in the adoption of social media marketing is given below:

*“As I always possess a smartphone with me, I’m ever*

*ready to respond to customers’ request. [Respondent 7, Personal Interview, 2021]*

#### **Theme 7: Observability of market happenings**

A respondent who was an owner of an SME strongly believed that she could observe the competitors’ moves in the social media platforms.

*“I often observe the competitors’ products in the social media. Then I come to know to what extent I can supply trendy products” [Respondent 4, Personal Interview, 2021]*

Similarly, another respondent commented as follows:

*“Many of my competitors are already doing business through social media. So the customers compare my business with others in the social media and prefer mine” [Respondent 10, Personal Interview, 2021]*

#### **Theme 8: Links among social media platforms**

Links are existing among social media platforms to optimize the usage of available social media platforms.

A respondent’s response regarding the link among social media platforms was extracted from the interviews

*“from a social media platform, we can verify what type of business product or service trend is expected by the customers. With such knowledge, the products can be sold according to the demand” [Respondent 4, Personal Interview, 2021]*

By abiding by the response given by the above respondent, another respondent stated that:

*“I usually observe the current trend in Pinterest and promote my business through Facebook and WhatsApp” [Respondent 9, Personal Interview, 2021]*

#### **Theme 9: Unique features**

The respondents revealed that because of the unique features available on social media platforms, they had the intention to adopt them.

A respondent revealed that language is not a barrier handle social media.

*“Though I don’t know the English Language, in the social media I handle social media page in my mother tongue (i.e. Tamil language). Customers who know only Tamil language deal with me without any hesitation” [Respondent 6, Personal Interview, 2021]*

A respondent came out with her points by saying that a feature of social media induced her to adopt social media marketing:

*“There is a feature called “insights” in Facebook. I do the market research through it and collect information in a summary and observe customers’ responses” [Respondent 9, Personal Interview, 2021]*

#### **Theme 10: Two-sided benefits**

SMEs benefit from social media marketing adoption in two ways such as customer-side benefits and business-side benefits

To support the customer- side benefit, a perceived customer side benefit is “Increasing customer base” which was supported by several respondents.

*“After our product became popular we were able to increase sales and increase our customers not only locally but abroad, too” [Respondent 4, Personal Interview, 2021]*

*“I embarked upon social media marketing to enhance customers. It has helped me to popularize my business among foreign customers and export goods to them” [Respondent 5, Personal Interview, 2021]*

*“My main purpose of adapting social media is to increase the number of customers for my business.” [Respondent 7, Personal Interview, 2021]*

SMEs view the customer-side benefits in terms of building customers’ trust through social media marketing.

***“I was awarded Lanka Achievers’ award last year. By posting the recognition on my page on social media I was able to attract more and more customers who trusted me”***  
***[Respondent 3, Personal Interview, 2021]***

Few respondents told that through social media marketing, they could get feedback from customers very quickly. Their responses as follows:

***“It becomes possible to expedite customers’ contacts and get customers’ feedbacks quickly”***  
***[Respondent 6, Personal Interview, 2021]***

***“When I market products through social media I can get customers’ feedbacks soon”***  
***[Respondent 8, Personal Interview, 2021]***

***“I get quick feedbacks for my social media postings and I am enthused to become famous in future through social media”***  
***[Respondent 10, Personal Interview, 2021]***

Another customer-side benefit expressed by the respondents was trace customers’ expectation which is more accurate and useful to plan for business.

A respondent who was an owner of an SME told about tracking customers’ needs and desires through social media.

***“Due to the close contacts between my customers and social media I can know customers’ needs and desires”***  
***[Respondent 6, Personal Interview, 2021]***

As a business-side benefit, SMEs believed that they could get benefits in terms of enhancing the business productivity, leveraging customers to the business website and handling multi-business simultaneously.

***“I have become keen to improve my products and I am doing so”***  
***[Respondent 6, Personal interview, 2021]***

A respondent who was an owner stated that she was induced to enhance her business.

***“I have registered my business and have a physical outlet. But more than 90% of my orders for my products and services are received from social media and I can enhance my business substantially by carrying it out by practical means”***  
***[Respondent 9, Personal Interview, 2021]***

A respondent who has a business website optimizes customers from social media business page to the business website.

***“I have a website for my business. People who prefer to buy through online service do so through credit card or debit card. Our website link is inserted in our social media pages. Thus***

*the number of customers who purchase through our website has increased” [Respondent 4, Personal Interview, 2021]*

*“I can induce customers to visit my business website by marketing through social media” [Respondent 8, Personal Interview, 2021]*

Similar to respondent 4, a respondent gave the response as follows

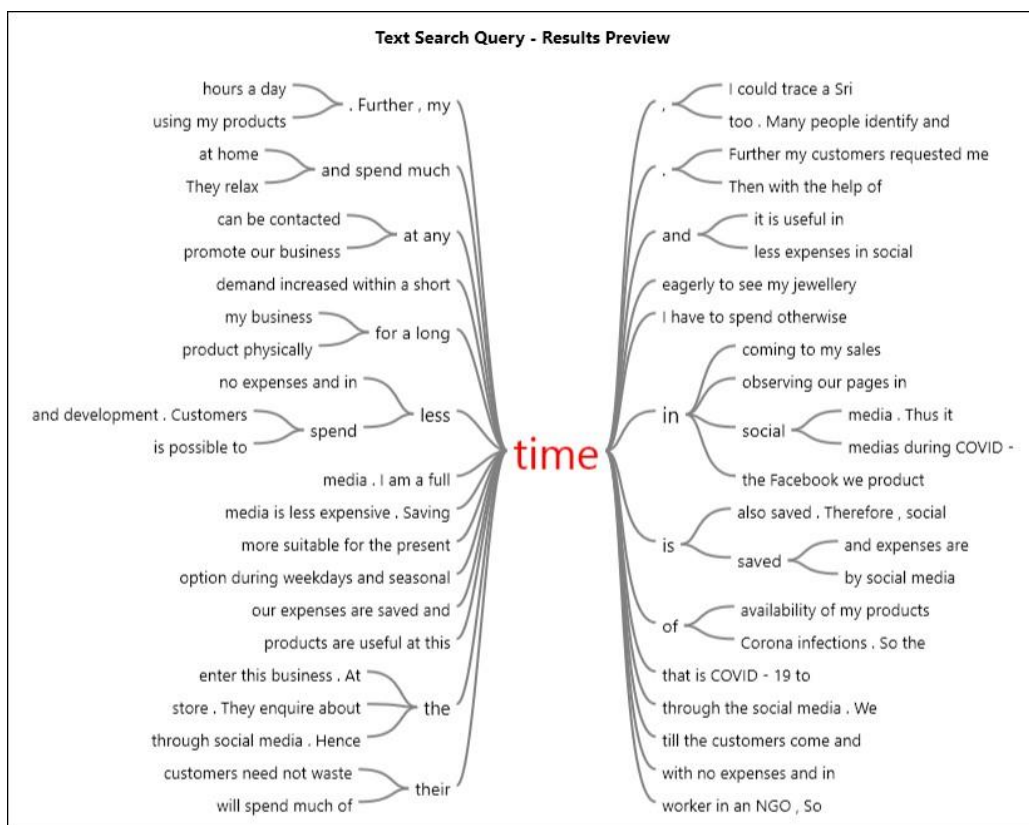


Figure 1: NVivo Word Tree- Time

**Theme 11: two-way cost reduction**

SMEs are benefitted in two ways (1) money saving (2) time-saving. Due to the adoption of social media marketing, cost-effectiveness in terms of money and time was found from the interviews with SMEs.

A responded told that she is benefitted from cost-effectiveness in terms of money and time.

*“It is possible to spend less time and fewer expenses in social media marketing. Further, investment in marketing is much less” [Respondent 5, Personal Interview, 2021]*

Similar to the above respondent, another respondent revealed her answers as follows:

*“I can boost my business in a wide range with only a little expense. I can reduce my losses by timely preparation of products as it becomes possible to ensure the actual demand through social media” [Respondent 9, Personal Interview, 2021]*

A respondent stated that the cost-effectiveness in term of money and time induced her to adopt it.

*“I invested only a small amount when embarking on social media marketing (i.e. internet connection, data cost). Our products can be easily introduced to customers without*

*any initial expenses through social media. Further, my time is saved by social media marketing” [Respondent 7, Personal Interview, 2021]*

A respondent expressed her viewpoint in terms of cost-effectiveness especially for advertising through the social media platforms

*“By making use of the Ads option during weekends and seasonal time in the Facebook we do our business with fewer expenses to reach many customers” [Respondent 10, Personal Interview, 2021]*

According to the responses taken from non-adopters of social media marketing, they shared their view on social media marketing by insisting on the cost of adoption.

*“I felt that social media is a technology-related platform, it may be the unbearable cost to adopt. But after you explain the basic aspects of cost savings through the social media marketing, I am willing to adopt it” [Respondent 2, Personal Interview, 2021]*

**Theme 12: New normal context**

All the responses related to the new normal situation which induced the SMEs to adopt social media marketing include the COVID-19 was the main inducing factor to adopt the social media marketing.



A respondent told the consequences of COVID-19 in his business field and why he adopted the social media market in an interesting way

***“It is very difficult to carry products to supermarkets during COVID-19 and other shops. But local and foreign customers view my social media pages and place orders and credit advances to my bank account. I then transport their required products by buses or courier” [Respondent 8, Personal Interview, 2021]***

A respondent told that due to the negative effects of COVID-19 she faced problems and how social media marketing made her overcome those negative effects

***“Even though businesses are dull due to COVID-19, it has become possible to observe customers’ responses through social media perpetually and maintain ties with customers.” [Respondent 6, Personal Interview, 2021]***

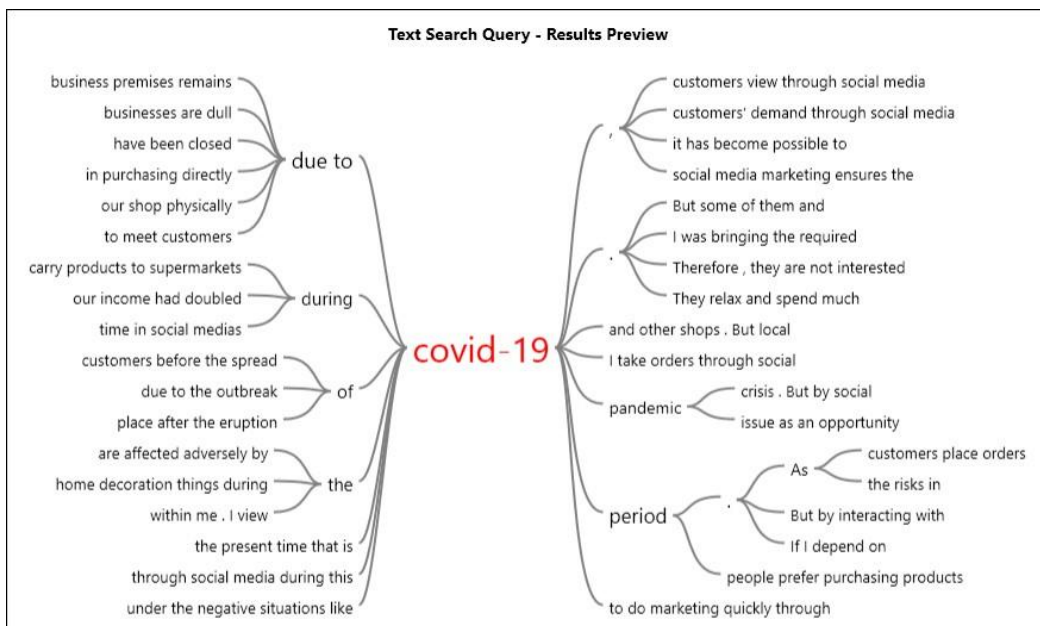
An interesting answer was received from a respondent who was a manager of an SME as follows:

***“Only after corona erupted, I felt the need to do the marketing through virtual media. Only four months back I started doing my marketing based on social media because the situation has***

***compelled people to purchase products from their homes through social media” [Respondent 10, Personal Interview, 2021]***

A response was taken from a non-adopter of social media marketing as follows:

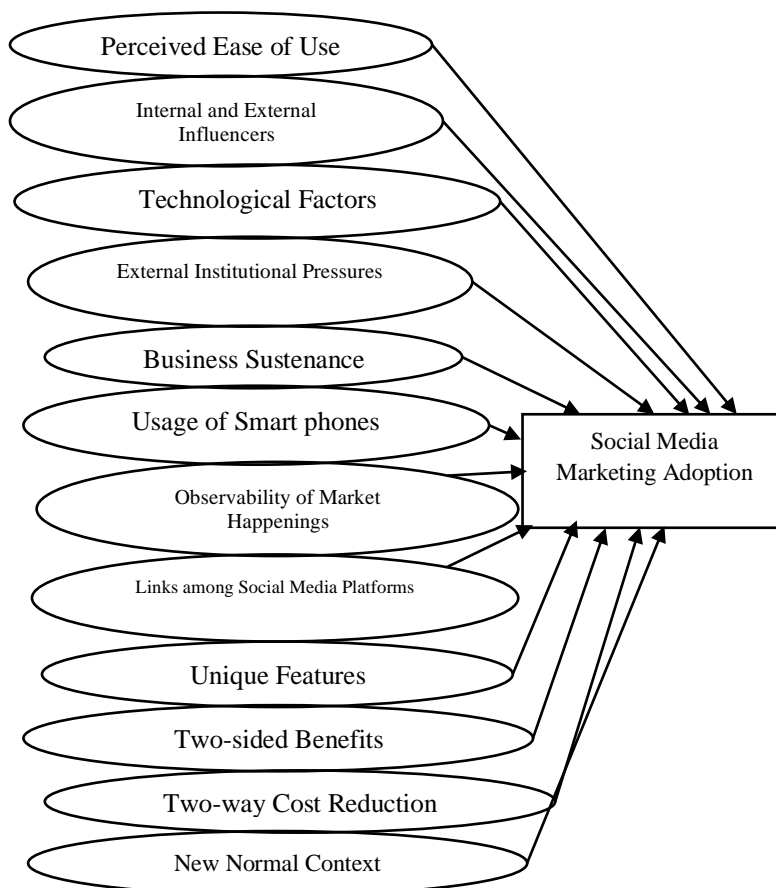
***“Due to the COVID-19 situation only I have realized the importance to have the business both on the physical market and virtual market like social media marketing.”***



**Figure 2: NVivo Word Tree- COVID-19**

The third objective of the study can be illustrated using the

following framework which was developed by the researcher.



**Figure 3: Theoretical model of social media marketing adoption**

#### 4. DISCUSSION

In the past studies, there were several studies carried out in the field of marketing on the factors influencing the adoption of various technological innovations such as cloud computing (Alshamaila, Papagiannidis & Li, 2013), e-collaboration (Chan, Chong & Zhou, 2012), Inter-Organization System (IOS) (Fu, Chang, Ku, Chang & Huang, 2014) and so on. Moreover, in the SME sector, there were considerable studies carried out

to identify the factors that influence the adoption of social media marketing (Chatterjee & Kumar Kar, 2020; Effendi et al., 2020).

In this study, the researcher has identified four determining factors of social media marketing adoption such as (1) perceived ease of use (2) internal and external influencers, (3) technological factors (4) external institutional pressures which were already proved in the past studies in the context of SMEs.

Moreover, in this study, eight more new factors are influencing the social media marketing adoption by the SMEs in the Northern Province of Sri Lanka identified from the in-depth interview data. Those newly identified factors were (1) business sustenance (2) usage of smartphones (3) observability of market happenings (4) links among social media platforms (5) unique features (6) two-sided benefits (7) two-way cost reduction and (8) new normal context.

The Factors determining the adoption of social media marketing are discussed below:

#### **Factor 1: Perceived ease of use**

Social media marketing is user friendly and it paves benefits for easily retrievable customers' information, easy imparting of training to employees and ease of promotion. A finding of this study is supported by Ahamat, Ali, & Hamid (2017) and Salloum, Mhamdi, Al Kurdi & Shaalan (2018).

#### **Factor 2: Internal and external influencers**

When adopting technological innovation, information sharing attitude and users' behaviour are highly affected by social influence. Family members, friends, society, relations, known people, neighbours, customers, business consultants, experts and

web designers act as the internal influencers who influenced the SMEs (adopters and non-adopters) to adopt social media marketing. AlSharji et al. (2018) found that organizational constructs had a significant effect on social media adoption. Based on this study, employees, business partners are the internal organizational influencers who induced the SMEs to adopt social media marketing.

#### **Factor 3: Technological factors**

Technological factors focus on technological aspects of a technological system. The protecting features (i.e. privacy, blocking, security settings) available in the social media platform are used by SMEs nowadays to tackle these risks.

Compatibility is considered an essential factor for SMEs and they could adopt social media marketing with the existed basic technological infrastructure. Ahmad, Bakar & Ahmad (2019) found the result that compatibility as one of the technological factors has a significant influence on an SME's decision to adopt social media.

#### **Factor 4: External institutional pressures**

External institutional pressures lead to the organizational structure and actions. The three environmental pressures are coercive, normative and mimetic pressures (Scott & Christensen,

1995). The coercive pressures to adopt social media marketing appears due to the suppliers' presence in the social media platforms and government authorized and non-government organizations or departments. Moreover, firm-supplier association, firm-customer association and customer-social media association are identified as normative pressures to the SMEs in adopting social media marketing. Further, the competitors' presence is also a pressure for the SMEs to adopt social media marketing.

#### **Factor 5: Business sustenance**

Under the negative situation due to the COVID-19 pandemic, adopters and non-adopters of social media marketing opine that depending only on the physical way of marketing rather than a virtual way of marketing (including social media marketing) is not practicable during this COVID-19 pandemic. Therefore, they realized the importance of social media marketing to sustain itself in the market without any break.

#### **Factor 6: Usage of smartphones**

Nowadays, From the customers' side and markers' side, there is a great use of smartphone which allows both the parties (customers and marketers) to get benefits in various ways. Due to this heavy usage of smartphones, marketers (SMEs in this study) also feel comfortable accessing

social media for marketing purposes and customers access marketers at any time to place orders, inquire about the price of the products and ask for other information at any time.

#### **Factor 7: Observability of market happenings**

The factor "Observability of market happenings" was identified from the interview where the respondents answered from the perspectives of themselves and customers. Say for examples, how far customers observe and compare businesses and to what extent marketers observe customers' responses and competitors' activities.

#### **Factor 8: Links among social media platforms**

Due to the link among social media platforms, SMEs were induced to adopt social media marketing. After identifying the trends in one social media platform (say for an example, from "Pinterest" which is a social media platform, burning trends among customers can be identified), SMEs could sell appropriate products according to the preferences of customers in another social media platform.

#### **Factor 9: Unique features**

SMEs adopt social media marketing because of the available unique features such as analytics, ads, multi-language

usage, messaging phase, insights and so on.

#### **Factor 10: Two-sided benefits**

The two folded benefits induced SMEs to adopt social media marketing. One is customers' side benefits (i.e. attracting customers, expediting customers' contacts, increasing customer base locally and globally, building customers' trust, tracing customers' expectations etc.) and the other is business side benefits (i.e. handling multi-businesses simultaneously etc.)

#### **Factor 11: Two-way cost reduction**

Due to the adoption of social media marketing, cost-effectiveness in terms of money and time was found from the interviews with SMEs. Although financial cost (money cost) has been already proved in past studies (Chatterjee & Kar, 2020), time cost reduction is also found in this study as a determining factor for SMEs for the adoption of social media marketing.

#### **Factor 12: New normal context**

After the eruption of COVID-19, due to the new normal situations, customers prefer to search the products and place the orders through social media platforms while they are at home or office. As businesses are dull due to the outbreak of COVID-19, SMEs which are the adopters of social media marketing intensified their

marketing activities on it and those who are the non-adopters have realized the importance to adopt it. Respondents who are the adopters of social media marketing view the COVID-19 pandemic as an opportunity to increase customers, sales and profit in a definite way.

### **5. CONCLUSION**

The present study explored the determining factors of social media marketing adoption, appropriate to a unique context (The Northern Province of Sri Lanka).

The interview data have been processed through qualitative thematic analysis by coding the similar data chunks into two steps (i.e. first cycle coding and second cycle coding). After that, the main themes were identified. In the initial coding phase, the researcher found 357 initial codes. In the second phase, which was the axial coding phase, 52 categories were identified. At the next phase of analysis, 12 major themes such as perceived ease of use, internal and external influencers, technological factors, external institutional pressures, business sustenance, usage of smartphones, observability of market happenings, links among social media platforms, unique features, two-sided benefits, two-way cost reduction and new normal context were identified as the factors determining social media marketing adoption by the

SMEs in the Northern Province of Sri Lanka.

This study can be a base for future studies in this field of research. However, the depth of the effects in the other parts of Sri Lanka would be different compared to the Northern Province of Sri Lanka. Therefore, it would be interesting to replicate this research in a wide variety of MSMEs spread over other provinces of Sri Lanka and other countries, to facilitate generalization of the results and comparison of results between other parts of Sri Lanka and other countries. Nevertheless this study is qualitative and explorative in nature and does not claim any generalizability.

This study was done in a qualitative way of Exploratory Factor Analysis (EFA). Future researchers can conduct a quantitative way of Confirmatory Factor Analysis (CFA) to confirm the explored factors from this study in the same context (The Northern Province of Sri Lanka) or else in other parts of Sri Lanka.

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## The Impact of Consumers' Attitudes on Green Purchase Intention

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### Abstract

The purpose of this paper is to investigate the impact of consumers' attitudes on green purchase intention in Sri Lanka, due to the lack of consensus that exists in the causal ordering of either antecedent or mediating variables. Additionally, the literature provides mixed results for the effects of consumers' intention on green purchase intention in the global context while there are few studies in the Sri Lankan context. This study is an attempt to fill these research gaps. The data were collected over randomly administering structured questionnaires from 100 green product buyers in Galle district, Sri Lanka. The partial least square path modeling (PLS) was used to measure the impact of social influences, environmental consciousness, environmental responsibility, and health consciousness, on green purchase intention. The findings of the study provided new ways to develop green marketing strategies for organizations by considering environmental concerns, environmental responsibilities, health consciousness, and social influences.

**Keywords:-** Environmental Consciousness, Environmental Responsibility, Green Purchase Intention, Health Consciousness, Social Influence

## 1. INTRODUCTION

Recently, the importance of natural resources has increased as limited resources have been utilized to satisfy peoples' needs. The attitudes of people change towards the environment and its protection (Choshaly, 2017). Many organizations in the world focused to produce environmentally friendly products to fulfill their customer's needs and also today most customers increase their willingness to consume environmentally friendly products (Sharma and Aswal, 2017). Because of many environmental issues derived from human civilization, people concentrated more on the environment. Therefore, the attitudes and behaviors of the people changed to purchase and consume environmentally friendly products (Joshi and Rahman, 2015). Uncontrolled environmental pollution, overpopulation, and scarcity of natural resources, people became aware of the global issues and concepts of sustainability spread widely. Now we are in the 21<sup>st</sup> century, peoples' intention and purchasing power has moved into environmentally friendly products and green product concept. This reason affects to increase in the demand for green products (Choshaly, 2017). Environmentally friendly products and green consumption were the most vital concepts (Valentini, 2011; Sharma and

Aswal, 2017) and these concepts are the most famous among the researchers (Lasuin and Ching, 2014; Jeevandas, et al., 2019). Although many researchers (Ali and Ahmad, 2012; Souza, et al., 2007; Joshi and Rahman, 2015) conducted researches by focusing the factors like price, quality, demographic characteristics, customer's characteristics, Some of the researchers (Choshaly, 2017; Vazifehdoust, et al., 2013; Tan and Lau, 2011; [Jaiswal](#) and Kant, 2018; Rana and Paul, 2017) conducted their research based on attitudes of consumers as environmental concern, perceived customer effectiveness, green advertising, green labeling, social influences, health consciousness. According to the aforementioned research findings, the literature provides mixed results for the effects of some antecedent and mediating variables upon purchase intention of green products. Moreover, such empirical disagreement points to a need for further research in some areas (Nyborg et al., 2006; Dipeolu et al., 2009). Especially, researchers (Yamaqupta, 2018; Alaboodi and Eneizan, 2019) point out the importance of consumer's attitudes to examine the impact of consumers' attitudes to green purchase intention in the Sri Lankan context. Therefore, this study attempt to fill this research gap by focusing on consumers' attitudes towards green purchase intention.



## **2. LITERATURE REVIEW**

### **2.1. Green purchase intention**

Research studies were conducted by Beckford et al., (2010) and Chan (2001), and they have concluded that green purchase intention is a significant predictor of green purchase behavior, which means that purchase intention is positively affecting the probability of a customer decides that he or she will buy green products. According to Aman et al., (2012), Rashid (2009), and Ali and Ahamad (2012), an individual's willingness to consume green products than traditional products, it can be defined as green purchase intention. Several research which observed green purchase behavior was focused on the theoretical relationships of attitude, intention, and behavior through the Theory of Reasoned Action (Aman et al., 2012; Ng and Paladino., 2009; Wahid et al., 2011).

### **2.2. Social Influence**

According to Wahid et al. (2011) "social influence is a proxy of the subjective norm". Furthermore, Social influence is the changes in a person's attitude and behavior which are influenced by another person's action such as persuading and threatening (DeLamater and Myers (2010). A study of the Jakarta cases (Irawan and Darmayanti, 2012), stated that social influence was the

second-lowest determinant on the green purchasing behavior among university students. The author concluded finally that the topic of environmental issues particularly environmental-friendly products was not encouraging among the group of university students in Jakarta. Thus, social influence does not have a significant effect on green purchase behavior. According to Varshneya, et al. (2017), stated that there is no impact on consumers' attitudes as well as purchasing intention, a research conducted by focusing on young adult Indian consumers.

### **2.3 Environmental Consciousness**

Many studies were conducted on the influence of environmental consciousness on green purchasing behavior (Irawan and Darmayanti, 2012; Aman et al., 2012; Albayrak et al., 2013). One of those research conducted by Irawan and Darmayanti (2012), indicated that environmental consciousness has a significant influence on green purchasing behavior among university students in Indonesia. Environmental consciousness states the extent to which people are aware of environmental issues and the willingness of them to solve and manage the environmental problems (Alibeli and Johnson, 2009).

## **2.4. Environmental Responsibility**

Many types of research point out that intention to green products purchase is influenced by many facts as environmental attitudes (Chekima, et al., 2016; Maichum, et al., 2017) and price (Sharaf and Md. Isa, 2017). Consumers who have positive attitudes towards environmentally friendly products and environmental concern, they tend to that they are responsible to engage environmental protection measures (Yusof, et al., 2013). Choshaly, in her 2017 study examined that perceived environmental responsibility is recognized as the top indicator of consumers' green purchase intention related to the usage of recycling bags on university students in Malaysia. Yue, et al., in their 2020 study that focused on Chinese consumers, concluded that there was a positive impact on green consumption intention and it can promote environmental concern.

## **2.5. Health consciousness**

According to Abdulsahib, et al., (2019), Green products' quality is much greater than the other available products and contain original vitamins and minerals along with this they are free from chemical induction to preserve it. Furthermore, it has stated that green product contains pure

vitamins that are having high percentage than the other ordinary products that are being made artificially such as Vitamin C is the most required element for the human body that includes in the green products. It develops the immune system in the human body to fight and protect against the disease such as cancer. According to Rahim, et al., (2012), the consumers who are interested about in green products displayed a positive attitude towards consumption. They tend to change their daily life and routine works to a new way of consuming green products.

## **3. CONCEPTUAL FRAMEWORK AND HYPOTHESIS**

### **3.1. Conceptual Framework**

The conceptual framework provides a clear guide of the way for research and it helps the researchers to make research findings very meaningful and acceptable level (Adom, et al., 2018). For the preparation of the conceptual framework, the previous researches findings most important. The conceptual framework of this study shows the following figure 1, regarding consumers' attitudes and green purchase intention.

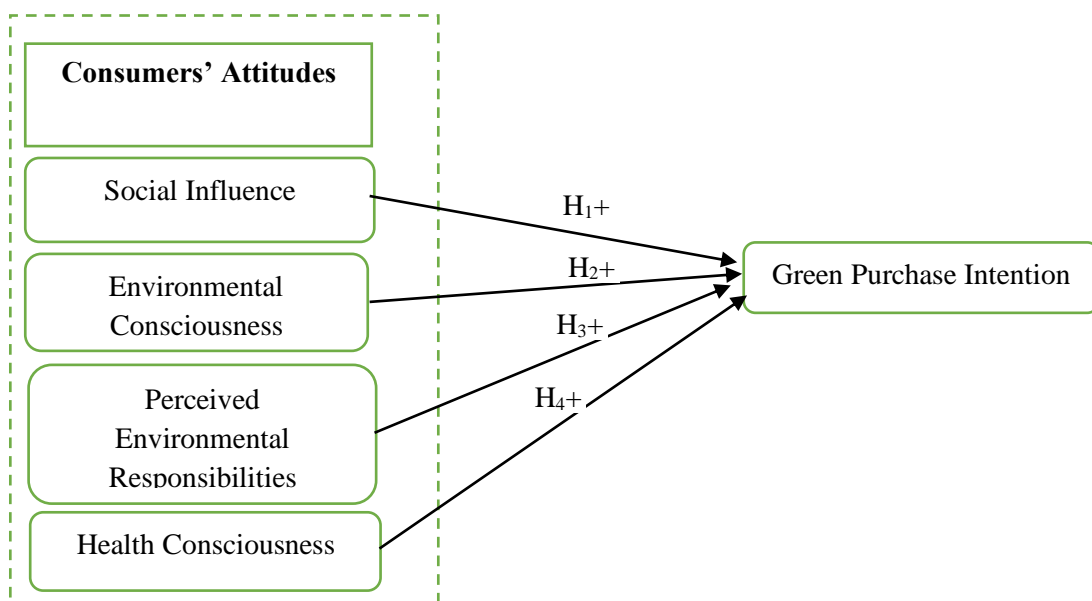


Figure 1: Conceptual framework

Source: Developed for this study (2020)

### 3.2. Hypothesis

#### 3.2.1 Social Influence and Green Purchase Intention

The customers have to face a social dilemma when purchasing environmentally friendly products because they comprise higher-cost items. It is important to consider the social effects of buying green products. Group of people likes to imitate another individual who is a member of the group about what they have or aspire to have consistent with their pro-environmental attitudes (Hasan, et al., 2018). Some researchers (DeLamater and

Myers, 2010; Ohman, 2011), concluded that the social influences positively impact the consumers' green purchase intention because social influences within the environment develop human expectation, belief, and cognitive competencies. Some researchers (Irawan and Darmayanti, 2012; Varshneya, et al., 2017) stated that the social influence has no significant impact on the consumers' green purchase intention because social influence was not encouraging consumers 'attitudes towards environmental issues as well as environmentally friendly products.

According to the above conclusions, social influences positively impact consumers'

green purchase intention. The first hypothesis developed as follows.

*H<sub>1</sub>: Social influence has a positive impact on green purchase intention*

### **3.2.2 Environmental Consciousness and Green Purchase Intention**

Environmental consciousness refers to the degree of emotionality, specific factual knowledge, and the knowledge of environmental issues (Chen, 2013). If consumers have enough knowledge and awareness about environmental issues, they tend to spend money on green products or they have a positive opinion towards the consumption of green products. However, consumers who are mostly aware of environmental issues don't consider the higher price of the products (Eneizen, et al., 2019). Most researchers (Irawan and Darmayanti, 2012; Aman et al., 2012; Albayrak et al., 2013) concluded that the environmental consciousness of consumers has a significant impact on their green purchase intention. Because of environmental consciousness, people pay attention to environmental issues and try to minimize them. Therefore, environmental concerns have a positive impact on green purchase intention. As mentioned above the second hypothesis is developed as follows.

*H<sub>2</sub>: Environmental consciousness has a positive impact on green purchase intention.*

### **3.2.3 Environmental Responsibility and Green Purchase Intention**

People who are knowledgeable about environmental responsibility are trying to save the nature, environment, and society from the dangerous effects of non-green products. An emotional involvement or behavior and attitudes of a person on environmental issues means Environmental Responsibility. (Abhasi, et al., 2015). Many researchers (Yusof et al., 2013; Choshaly, 2017) stated that environmental responsibility has a significant impact on consumers' green purchase intention because most people tend to that they are responsible for environmental protection. The people who are more responsive to the environmental issues, willing to pay more and buy green products because they tend to that products give less harm to the environment (Yamaqpta, 2018).

According to that, environmental responsibility positively impacts consumers' green purchase intention and the third hypothesis is developed as follows.

*H<sub>3</sub>: Environmental responsibility has a positive impact on green purchase intention.*

### **3.2.4 Health Consciousness and Green Purchase Intention**

Every people have to right to select and consume safe and healthy products because human health is crucial for every human being (Abdulsahid et al., 2019). Consumers who have health-conscious are learning towards long-term utilitarian than short-term hedonic aspects (Mai and Hoffman, 2015). Many researchers (Dipeolu et al., 2009; Rahim, et al., 2012) concluded that the people who care about their healthy life are interested to buy green products. Most people think that green products develop their immune systems also. Not only that, most people persuade to the green products because they think that green products contain original vitamins and minerals and they help to maintain their healthy life (Eneizan and Alaboodi, 2019). Therefore, the other independent variable is Health consciousness and the fourth hypothesis developed as follows.

*H<sub>4</sub>: Health consciousness has a positive impact on green purchase intention.*

## **4. STUDY DESIGN AND METHODOLOGY**

### **4.1 Research Context**

Nowadays green concepts and healthy foods are most familiar to us because the Department of Agriculture in Sri Lanka tries to build up a great image of healthy food items in people's minds. In 2012, they introduced "Helabojun" to the people who are most likely to consume healthy and natural tasty foods. Ministry of Agriculture and Department of Agriculture are combined with this concept, Helabojun and there are 22 Helabojun outlets are established covering all provinces in Sri Lanka. The main objectives of this concept are to empower women agriculture entrepreneurs, introduce local and traditional cereals of foods without any harmful artificial preservatives to the customers, etc.

Export Development Board of Sri Lanka is responsible for the development and promotion of exports, established in 1979 under the Sri Lanka Export Development Act No.40, under the influence and guidance of the International Trade Center and the United Nations Conference on Development of Trade and Tariffs. The goal of the Export Development Board is to provide assistance and create opportunities for Sri Lankan exporters and industries to expand their business

internationally. Among exporting items Ceylon tea, rubber, coconut, spices, and foods, Sri Lankan organic products have good demand from the global market.

Nowadays most supermarkets have followed the green concept by creating a green image on their consumer's minds. Some of supermarkets in Sri Lanka are introducing reusable bags for the customers and they provide facilities to the customers to purchase most green products. Some super markets changed the background of the outlets as green concepts and it indicates that they change as green concepts.

#### **4.2 Sample, Study variables, Questionnaire Design, and Data collection**

Population means an entire group that the researcher hopes to use for the research. It may be a group of people, objects, or events grouped by common features (Kenton, 2020). Sample represents a whole population and it refers to the smaller and manageable part of the population (Kenton, 2019). According to the above definitions, the population of this study is the consumers who purchase and consume environmentally friendly products in Sri Lanka and the sample is consumers who purchase and consume

environmentally friendly products in Galle District. The telephone directory is used as a sample frame because a sample frame is a list or device that the researcher can select a sample from the population (Lewis-Beck, et al., 2004). The random sampling technique is most suitable for this to select the sample from the population because the sample is limited to Galle District. Green product user in Galle District is the unit of analysis of this study.

Data collection is the systematic process used to gather relevant information for stated research questions that enables to test of hypotheses and evaluate research outcomes (Kabir, 2016). Both primary and secondary data are collected. Primary data is collected by providing questionnaires to selected sample and questionnaires are the main source which is used to gather primary data. Secondary data is gathered from websites, articles, magazines, and leaflets relating to green products, internal records. The questionnaire contains three sections: background of the consumer, questions related to the variables which are included in this study, and demographic aspects. Out of 200 questionnaires, 140 questionnaires were received and 40 questionnaires were rejected because of uncompleted and the response rate was 70%.

Although data analysis has been done by using PLS, demographic data and background data have analyzed using SPSS. According to background data, 93 respondents were green consumers and only 7 respondents were not the green consumer among 100 respondents. Therefore, to measure the path analysis using PLS-SEM, the study used only 93 questionnaires. 35 respondents use supermarkets to buy green products and 22 respondents use agricultural outlets to buy green products. 10 respondents use personal shops and 11 respondents use both supermarkets and agriculture outlets. Remaining 15 respondents use all options as supermarkets, agricultural outlets, and personal shops to buy green products. Among green consumers 45 respondents shopping per week to buy those products and 20 respondents shopping twice a month. 15 respondents and 13 respondents shopping to buy those products per month and rarely respectively. When considering the source which those consumers get knowledge about green products 49 respondents get knowledge from their friends and 15 respondents get knowledge from their homes. Remains 29 respondents have mentioned others as social media, advertisements, etc which they use to get knowledge about green products. According to demographic data, 58

respondents were working in the government sector while 26 respondents in private sectors among 93 respondents. 09 respondents were in their own business. Among them 73 respondents were executives and that was 78.5%, 11 were non-executive level and that was 11.8%, while 09 respondents were the owners of the business and that was 9.7%. According to the frequency distribution, executive-level people are mostly persuaded to the green products. The educational level of the respondents as follows 11 respondents have Advance Level education and 45 respondents are graduates. While 36 respondents have Post Graduate qualification, one respondent is in the other category. According to the income level, 20 respondents were in the Rs.55,001- Rs. 70,000 and 11 respondents were in more than Rs.70, 001 average monthly income level. While 28 respondents were in the Rs.25,001- Rs.40,000 average monthly income level, remains 34 respondents were in Rs.40,001- Rs.55,000 average monthly income level. According to that the people who are in the highest monthly income level have attitudes towards green products. Considering the gender 51.6% respondents were male and 48.4% respondents were female. Most of the respondents (55 respondents) were in the 31yrs-40yrs age group and 19 respondents represent the 41yrs-50yrs age group. 13 respondents

represent above 51 age group and remain 06 respondents were in the 20yrs-30yrs age group. The second section of the questionnaire consisting of five variables and six items are considered to measure the green purchase intention those are taken from Kong, et al., 2014; Yamaqupta, 2018; Ng and Law, 2015; Eneizan and Alabboodi, 2019; and Saichao, 2016. According to the previous researches, five items (Puspitasari, et al., 2018; Saichao, 2016) for social influence, five items (Ng and Law, 2015; Yue, et al. 2020 and Eneizan and Alabboodi, 2019) for environmental consciousness, five items (Yamaqupta, 2018; Ng and Law, 2015 and Yue, et al. 2020) for environmental responsibility and four items (Eneizan and Alabboodi, 2019 and Saichao, 2016) for health consciousness were selected to

measure the impact on green purchase intention and they are measured by using five Likert scales which is 1=strongly disagree, 2=disagree, 3=moderate, 4=agree, and 5=strongly agree.

## 5. DATA ANALYSIS AND RESULTS

Discriminant validity assessment is used for analyzing relationships between latent variables. Cross-loading of indicator and Fornell and Larcker criterion of correlation are the methods used to evaluate the Discriminant Validity (Hamid et al., 2017). The below table 1, shows the Discriminant Validity of 5 latent variables, and the value of variables are greater than their cross-loadings are indicated the variables of the model are perfectly correlated.

**Table 1: Discriminant Validity of the Latent Variables**

Variables	1	2	3	4	5
Environmental Consciousness	<b>0.774</b>				
Environmental Responsibilities	0.519	<b>0.708</b>			
Green Purchase Intention	0.491	0.398	<b>0.727</b>		
Health Consciousness	0.408	0.402	0.275	<b>0.759</b>	
Social Influence	0.134	0.089	0.456	0.096	<b>0.765</b>

Source: Survey Data, 2020



### 5.1 Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) has become a popular tool in all areas of psychology including educational research because it is a powerful and flexible statistical technique and it focuses on modeling the relationship between observed indicators and underlying latent variables (Gallagher and Brown, 2019). *Social Influence*: Based on the value of CFA, there were two items were deleted among five items. *I learned a lot about environmentally friendly products from my friends* ( $\beta = 0.553$ ;  $t = 3.109$ ) and *I discuss with my friends about environmentally friendly products* ( $\beta = 0.232$ ;  $t = 1.117$ ) were the items that were deleted because the factor loadings of these items were taken below 0.5 and near 0.5 as well low t-values. (Nunnally and Bernstein, 1994). The initial composite reliability of these variables was 0.75 and the average variance extracted was 0.4 indicate that the measurement model should be re-specified. The following 3 items were retained: *I share information about green products with my friends* ( $\beta = 0.757$ ;  $t = 6.711$ ), *I learned about environmental issues from my friends* ( $\beta = 0.776$ ;  $t = 7.239$ ) and *I discuss with my friends about environmental issues* ( $\beta = 0.683$ ;  $t = 5.791$ ). The factor loading values of the re-stated measurement model were considerably better than the first

model. All factor loadings vary between 0.72 and 0.79 and the composite reliability was 0.809, which is higher than the recommended minimum level of 0.60 (Bagozzi and Yi, 1988) and the average variance extracted was 0.585, which is higher than the minimum level of 0.50 recommended by Fornell and Lacker (1981). *Environmental Consciousness*: Based on the CFA result, there were two items were deleted among five items because of the low factor loading value. The items that were deleted were the following. *I think that humans are seriously abusing the environment* ( $\beta = 0.584$ ;  $t = 4.537$ ) and *I think plants and animals have as much right as humans to exit* ( $\beta = 0.529$ ;  $t = 3.426$ ). The initial composite reliability and average variance extracted of these variables were 0.802 and 0.452 respectively before deleting those items. The following 3 items were retained as *I am emotionally involved in environmental protection issues* ( $\beta = 0.733$ ;  $t = 10.980$ ), *I often think about how the environmental quality can be improved* ( $\beta = 0.724$ ;  $t = 8.395$ ) and *I often think it is important to raise environmental awareness among people* ( $\beta = 0.761$ ;  $t = 12.053$ ). The factor loadings of the final measurement model varied between 0.76 and 0.79. The composite reliability was 0.818 and the average variance extracted was 0.599 which is higher than the recommended level of 0.60 (Bagozzi and Yi,

1988) and 0.5 recommended by Fornell and Lacker (1981) respectively. *Environmental Responsibility*: Based on the results of the CFA, it was decided to delete two items and to retain three items under this variable because of the low factor loading value. The deleted items were mentioned as follows: *I think I have a responsibility in protecting the environment in the country* ( $\beta = 0.346$ ;  $t = 1.471$ ) and *I will work to make my surrounding environment a better place* ( $\beta = 0.399$ ;  $t = 1.551$ ). The initial composite reliability and average variance extracted of this variable were 0.692 and 0.328 respectively before deleting these items. Retained 3 items as follows: *I can learn how to improve the environment* ( $\beta = 0.689$ ;  $t = 4.386$ ), *I think the environmental protection is the responsibility of the government, not me* ( $\beta = 0.547$ ;  $t = 2.976$ ) and *I should be responsible for protecting our environment* ( $\beta = 0.767$ ;  $t = 5.709$ ). The factor loadings of the re-specified measurement model were considerably better than the first model. All factor loadings vary between 0.64 and 0.79 which were reasonably high. The composite reliability was 0.749 which was higher than the recommended minimum level of 0.60 (Bagozzi and Yi, 1988) and the average variance extracted was 0.501 which was the minimum level suggested by Fornell and Larker (1981). *Health Consciousness*: There were 4

items stated under this variable and all items were retained because the CFA results of all items were taken more than 0.6 as mentioned as follows: *I reflect on my health a lot* ( $\beta = 0.756$ ;  $t = 4.630$ ), *I take responsibility for the state of my health* ( $\beta = 0.685$ ;  $t = 4.509$ ), *I am very self-conscious about my health* ( $\beta = 0.793$ ;  $t = 8.292$ ) and *I am generally attentive my inner feelings about my health* ( $\beta = 0.797$ ;  $t = 6.662$ ). The composite reliability of this variable was 0.844 and the average variance extracted was 0.576. According to the re-specified measurement model, the factor loadings varied between 0.68 and 0.79. The composite reliability of this variable was 0.844, which is higher than the recommended level of 0.6 (Bagozzi and Yi, 1988), and the AVE value of 0.576 which is higher than the recommended level of 0.5 suggested by Fornell and Larcker (1981). *Green Purchase Intention*: There were 06 items stated under this variable and all items were retained because the CFA value of all items was taken more than 0.6 and the selected items were mentioned as follows. *I plan to switch to a green version of products* ( $\beta = 0.627$ ;  $t = 6.657$ ), *I am willing to continuously buy green products* ( $\beta = 0.745$ ;  $t = 12.151$ ), *I am willing to pay more on green products* ( $\beta = 0.746$ ;  $t = 12.555$ ), *I have high intention to buy green products* ( $\beta = 0.687$ ;  $t =$

9.258), *I will make every effort to consume green products* ( $\beta=0.769$ ;  $t= 15.918$ ) and *When I want to buy a product, I look at the ingredients label to see if it contains things that are environmentally damaging* ( $\beta=0.771$ ;  $t= 14.093$ ). The composite reliability and average variance extracted were 0.869 and 0.527 respectively of this variable. The factor loadings of the re-stated measurement model of green purchase intention vary between 0.63 and 0.76. The composite reliability of this variable was 0.870, which is higher than the recommended minimum level of

0.60 (Bagozzi and Yi, 1988). The AVE value of this variable was 0.528, which is higher than the minimum level of 0.50 suggested by Fornell and Larcker (1981).

## 5.2. Model fit

A good model fit refers to a model that accurately approximates the output when it is provided with unseen inputs. Standardized Root Mean Square Residual (SRMR), exact fit criteria d\_ULS and d\_G, Normed Fit Index (NFI), Chi-Square are the measures offering from Smart PLS.

**Table 2: Model fit summary**

	Saturated Model	Estimated Model
SRMR	0.098	0.098
d_ULS	1.821	1.821
d_G	0.597	0.597
Chi-Square	325.362	325.362
NFI	0.535	0.535

Source: Survey Data, 2020

Standardized Root Mean Square Residual (SRMR) is an index that shows the average of standardized residuals between the observed and the hypothesized covariance matrices. When the SRMR value smaller than 0.10, indicates the acceptable fit and it can be interpreted as the indicator of good fit when it produces a value

lower than 0.05 (Cangur and Ercan, 2015). According to the above table 2, the SRMR value was taken as 0.098 and indicated that the model achieved an acceptable level.

For a statistical model Normed Fit Index (NFI) is used to measure of goodness of fit, which is not affected by the number of parameters/variables in the

model. Through a comparison of the model of interest to a model of completely uncorrelated variables, Goodness of fit is measured (Ullman, 2006). The

### 5.3. Structural Model

The structural model in figure 2 is evaluated with respect to the estimates and hypothesis tests regarding the causal relations between exogenous and endogenous variables specified in

NFI value should be represented between 0 and 1. The above table 2, shows the NFI value as 0.535 and it indicates that the model is better.

the path diagram. Standard errors and test statistics for the relevant parameters are estimated in SmartPLS with the Bootstrapping option.

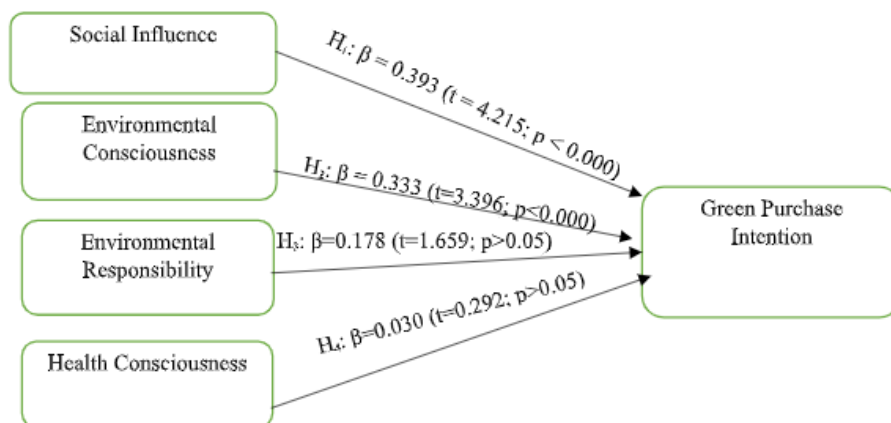


Figure 2: Structural model

Structural modal for the research conceptualized between factors like social influence, environmental consciousness, environmental responsibility, health consciousness, and green purchase intention. The  $\beta = 0.393$  and  $t=4.215$  values were between social influences and green purchase intention as well the  $p < 0.000$ . The values between environmental responsibility and green purchase intention as

follows depend on 3 items:  $\beta = 0.178$ ;  $t = 1.659$  and  $p > 0.05$ . Depend on 3 items, the values between environmental consciousness and green purchase intention were as follows:  $\beta = 0.333$ ;  $t = 3.396$ , and  $p < 0.000$ .

The values between health consciousness and green purchase intention depend on 4 items were  $\beta = 0.030$ ;  $t = 0.292$  and  $p > 0.05$ .

## **5.4 Hypothesis Testing**

Hypothesis testing is used to tests an assumption regarding a population parameter. The methodology followed by the analyst depends on the nature of the data used and the reason for the analysis. Hypothesis testing is helped to assess the acceptability of a hypothesis by using sample data from a population or data generating process (Majaski, 2020).

### **5.4.1 Social Influence and Green Purchase Intention**

Hypothesis 1 mentioned that social influence has a positive impact on green purchase intention. The analyzed data is supported to prove this ( $\beta=0.393$ ;  $t=4.215$ ;  $p<0.000$ ) and those findings indicate that the effect is in the expected direction and that the effect is statistically significant.

### **5.4.2 Environmental Consciousness and Green Purchase Intention**

Hypothesis 2 postulated that there is a positive impact of environmental consciousness on green purchase intention. This hypothesis is supported by the analyzed data ( $\beta=0.333$ ;  $t=3.396$ ;  $p<0.000$ ). The findings indicate that the effect is in the expected direction and that the effect is statistically significant.

### **5.4.3 Environmental Responsibility and Green Purchase Intention**

Hypothesis 3 stated that environmental responsibility has a positive impact on green purchase intention. The analyzed data ( $\beta=0.178$ ;  $t=1.659$ ;  $p>0.05$ ) is not supported to prove the above-mentioned hypothesis. The findings are statistically insignificant.

### *5.4.4 Health Consciousness and Green Purchase Intention*

Hypothesis 4 stated that health consciousness has a positive impact on green purchase intention. This hypothesis is not supported by the analyzed data because the findings are statistically insignificant. The results mentioned as follows:  $\beta=0.030$ ;  $t=0.292$ ;  $p>0.05$ ).

## 6. DISCUSSION

This study mainly focused on the consumers' attitudes and their impact on green purchase intention. Consumers' attitudes are measured under four variables as social influences, environmental consciousness, environmental responsibility, and health consciousness. Through this study identified that social influence, and environmental consciousness were a positive impact on green purchase intention and environmental responsibility and health consciousness were not positively impact green purchase intention. As concluded by many researchers (DeLamater and Myers, 2010; Ohman, 2011) Social Influences was significantly impacted on green purchase intention in this study. Most respondents aware of environmental issues and environmentally friendly products as well they share information with others. Therefore, their awareness of the environment was improved. The results of this study found the 65% of respondents represent below 40 years and it was indicated that the young and Middle Ages mostly like to use green products. Therefore the higher and efficient motivation campaigns need to change attitudes towards green purchase. Environmental consciousness has also taken a positive impact on green purchase intention as concluded by many researchers

(Irawan and Darmayanti, 2012; Aman et al., 2012; Albayrak et al., 2013). This study identified that many people emotionally involved in environmental protection issues, they think about the environmental quality and importance to raise environmental awareness among people. Therefore many educational awareness programs, motivational programs can be done to persuade people towards green products by using many sources.

Many researchers (Yusof et al., 2013; Choshaly, 2017) concluded that there was a positive impact between environmental responsibility and green purchase intention. But in this study, there was no significant impact between environmental responsibility and green purchase intention. Therefore all organizations have to follow several strategies by using the most familiar multiple communication channels like TV, Radio, Newspapers, Social media, etc to display environmental issues and improve awareness of people. Through them, peoples' environmental responsibility can be improved and enhance their green purchase intention. Many researchers (Meireles, 2018; Abdulsahid et al., 2019) got a positive impact between health consciousness and green purchase intention though some researchers (Michaelidou et al., 2007) concluded that there was

no significant impact considering organic products. This study also found there was no positive impact of health consciousness on green purchase intention. Most people were aware of their health some reasons were influenced as income level, profession sector, etc because organic products relatively taken higher price, customers have to pay more money on organic products. In this study, 65% of respondents represented below Rs.55,000 average income level. People cannot buy organic products on their choices if they want to utilize them because the organic products' shops are not spread in the country. Many Sri Lankans consider various factors as a convenience, low price, tasty when they buy products of that quality. Therefore all governments and other organizations try to follow various strategies to introduce these healthy products to the customers. For that, they can follow several steps as spread organic products' shops all over the country, introduce an online purchasing system, provide good quality and tasty products at fair prices, and promote products by using Medias.

Research and development are most vital to implement new concepts regarding green products. Therefore organizations have to pay attention to investment regarding new technologies suitable for green products, new products and introduce them with

diversification, quality assurance to the consumers. Through these activities, they can minimize environmental issues. By giving awareness about environmental issues such as a decline in natural resources, waste pollution, and noise to the people, they motivate them to purchase green products. Green consumption gives benefits such as improving safety and health for all communities, reduce the use of energy and natural resources by developing new green products or eco-friendly products. Green shopping promotes recycling of waste because using recycled products saving consumers money and contributes to environmental protection.

## **7. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS**

When conducting this study there were many limitations. This research mainly focused on Galle District and the sample size was limited to 100 respondents. As well most of the respondents represented in the government sector as 62%. Therefore the findings of this study cannot be generalized for the general population in Sri Lankan context. Therefore it is recommended to future research should expand the sample size by covering all countries and enlarge the scope of the research to get very clear findings.

This study considered only four variables as social influences, environmental consciousness, environmental responsibilities, and health consciousness affect green purchase intention. In addition, there are many variables are impacted consumers' attitudes on green consumptions or buying intention. Therefore, future research can be focused on other demographic and psychological factors those influence consumers' green purchase intention.

The selected four variables for measuring consumers' attitudes

consider as antecedents. Although this study only considers these antecedents variables, many precedent variables influence green purchase as green purchase behavior, green customer satisfaction, green customer loyalty, etc. It is suggested to future research to develop the model by considering those two variables, antecedents and precedents to measure consumers' green purchase intention. It helps to understand the pre and post situations of customer.

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## **Organizational Resilience: What it is and What it isn't? A Conceptual Review**

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### **Abstract**

Organizational Resilience (OR) as a construct and as a socioeconomic challenge is gaining uprising attention. Yet, a better understanding of the term in terms of what it is and what it isn't is still far behind. The present study is aimed at revisiting the definitions of OR for elucidating the scope of it. A systematic review of selected journal articles of 30 years (1990-2020) indexed in SSCI was performed. Both identifying and distinguishing facets of definitions were reviewed qualitatively and presented. Findings indicate that OR is a multidimensional construct that possesses several features that distinguish it from other similar constructs. The study concluded that the OR is about an organizational philosophy comprised of diverse competencies to manage challenging environmental events in a continuous and progressive way. Implications suggest that any conceptualization of OR should primarily centre on the long-term continuous process of meeting the challenging environmental occurrences rather than a set of discrete capabilities to respond to a devastating event.

**Keywords:-** Bouncing Back; Definitions; Organizational Resilience; Review



## 1. INTRODUCTION

The term resilience is often used for denoting the ability to “bouncing back”. It is rooted in the Latin term “resiliere” which gives the similar meaning of “jumping back” (Klein, Nicholls, & Thomalla, 2003; Paton & Johnston, 2006). Despite the appearance of the term being noted in general use for decades, ecology was the first scientific discipline to adopt the term in building its theoretical construction. Holling (1973) pioneered the use of the resilience concept in the field of ecology. He defined (1973) resilience in the context of ecosystems as their ability to absorb changes and persist. With Holling’s initiative in 1973, the term branched into several areas of studies.

Organizational Resilience (OR) is one of such branches that address how organizations can combat the uninvited environmental uncertainties. Along with the inaugural work of Weick (1993), OR, which thrived in the face of the accelerated presence of disasters in the world of business, gained greater attention from both scholars and professionals (Vogus & Sutcliffe, 2008; Hillmann & Guenther, 2020). For instance, the pandemic situation that arose due to the new COVID 19 virus compelled us to reassess how resilient we are as businesses.

However, the findings of the previous reviews show that the term lacks clarity in terms of interpretation and measurement. For instance, Amann and Jaussaud (2012) claimed that the term lacks clarity despite its popularity as a promising factor for both practitioners and for scholars. Duchek (2020) reported that OR as a core construct lacks consistent understanding. Moreover, Burnard and Bhamra (2011) and Linnenluecke (2017) while assessing the theoretical foundation of the construct noted the interpretational anomalies of the OR definitions which cause them to offer new definitions. Moreover, reviews of the OR presented so far staged have been diverse research agendas. Regardless of the dominance of the construct in the world of empirical studies, these spares in the definition and measurement have reduced the significance of the concept as an applied organizational construct (Amann and Jaussaud 2012; Brand and Jax 2007; Burnard and Bhamra 2011; Linnenluecke 2017). Regardless of the numerous contributions by different authors towards the development of the concept, until recently a uniform definition of OR has not staged (Linnenluecke, 2017; Xiao & Cao, 2017; DesJardine et al. 2017; Hillmann & Guenther, 2020).

For example, OR has been defined as capacity, capability, characteristic, outcome, process,

strategy, approach, philosophy, process, competency attribute, and much more (Hillmann & Guenther, 2020). Resultantly, it is been criticized for ambiguity and inconsistency. Additionally, theoretical support available for empirical studies was found less reliable to adopt (Brand and Jax 2007; Hillmann & Guenther, 2020). Importantly, this has given birth to studies of a different focus. For instance, greater diversity is noted with respect to their research focus among many of the reviewed performed so far. Hillmann and Guenther (2020) pointed the threat towards the significance of the concept for practice and research due to deficiencies associated with the definition and the measurement. On the other hand, OR has become the centre of organizational dialogues with the increased business uncertainties. Likewise, many leading practitioner journals often stage the insights of resilient organizations (Linnenluecke, 2015; DesJardine, Bansal, & Yang, 2017; Hillmann & Guenther, 2020). Despite the immense presence of the term in the empirical inventory, issues of conceptualization are still prevailed (Hillmann & Guenther, 2020). This paper is driven by the aim of revisiting the definitions of OR for elucidating what it is and what it isn't.

## 2. METHODS

A systematic review of the OR literature was performed. Research articles published in SSCI journals were drawn from leading e-databases namely Emerald, JSTOR, OXFORD, EBSCO, Science Direct, and Taylor & Francis. The keywords; "definition of OR", "defining OR", "review of OR", and "reviewing OR" were set as the inclusion criteria where articles of other titles (i.e., OR measures, scales of OR) and non-indexed journal articles with keywords were excluded. In addition to the aforesaid e-databases, the search of articles was performed in online journals of related disciplines. The search resulted in 467 articles (1990 – 2020) including 12 meta-reviews among which 205 articles were considered for the review. The selection of articles considered the scientific merit of the paper and as well the source. Both the identifying and distinguishing facets of definitions were analysed qualitatively (Flynn et al., 1990) by performing a thematic analysis. Tables and narratives presented the analysed data.

## 3. RESULTS

Table 1 presents the summary of the reviewed definitions.

**Table 1: Summary of Definitions**

<b>Author/s</b>	<b>Definition</b>	<b>Theme/s</b>
Annarelli & Nonino, (2016)	A capability to face disruptions and unexpected events in advance thanks to the strategic awareness and linked operational management of internal and external shocks.	Capability Uncertainty Adverse events Environment
Banahene et al., (2014)	Organisational resilience is a capability which enables organisations to adjust to perturbation, moderate the effects of risk and uncertainty and take advantage of emergent opportunities.	Capability Uncertainty Adjust
Begin & Chabaud, (2010)	The capacity of organizations to cope with and bounce back from unfavourable changes in their environment.	Capacity Cope Bounce back Adverse events Environment
BSI BS 65000, (2014)	The resilient organisation is able to anticipate, respond and adapt to acute or sudden shocks and chronic or incremental changes so that it survives and prospers into the future.	Anticipate Respond Adapt Incremental Growth Adverse events
De Oliveira, Teixeira, & Werther, (2013)	The continuous renewal of competitive advantages.	Continuous
Duchek et al., (2020)	Resilience means effectively responding to adverse events not only after such events but before and during them as well.	Adverse events Respond
Gibson & Tarrant, (2010)	The outcome is influenced by a dynamic complex combination of environmental factors.	Outcome Environment
Hale & Hejjer, (2006)	The characteristic of managing the organisation's activities is to anticipate and circumvent threats to its existence and primary goals.	Characteristic Anticipate Manage
Hillmann & Guenther, (2020)	The organization's ability to restore to the original state even develops a new skill in disruptive conditions.	Ability Bounce back Skill Growth Adverse events

Hollnagel, (2006); Nemeth, et al., (2011)	The essence of resilience is the intrinsic ability of an organisation (system) to maintain or regain a dynamically stable state, which allows it to continue operations after a major mishap and/or in the presence of continuous stress.	Ability Stable Adverse events Continuous
Janellis Pvt Ltd, (2015)	A resilient organization has the ability to intelligently anticipate and manage the change swiftly, has the capacity to learn from challenges and seeks opportunities to enhance its capability to adapt, bounce back faster, smarter and stronger.	Ability Anticipate Manage Capacity Capability Adapt Bounce back Growth
Jiwani & Milley, (2009)	Represent adaptive capabilities of organizations faced with uncertainty in the context of complexity. An organization's ability to absorb strain and preserve or improve functioning, despite the presence of adversity.	Capability Adapt Uncertainty Ability Adverse events
Kahn et al., (2018)	A set of attitudes about desirable actions by organisational representatives, as it is about developing new capabilities.	Attitudes Capabilities Growth
Kendra & Wachtendorf, (2003)	Resilience has been described as a multidimensional, socio-technical phenomenon that addresses how people, as individuals or groups, manage uncertainty.	Multidimensional Socio-technical phenomenon Uncertainty Manage
Lee, Vargo, & Seville, (2013)	A unique blend of cognitive, behavioural, and contextual properties that increase a firm's ability to understand its current situation and to develop customized responses that reflect that understanding.	Cognitive Behavioural Contextual Ability Unique
Lengnick-Hall & Beck, (2003)	A firm's ability to effectively absorb, develop situation-specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organization survival.	Ability Absorb Adverse events
Lengnick-Hall et al.,	Ability of systems to prevent or adapt to changing conditions in order to	Ability Adapt

(2011)	maintain control.	
Leveson, et al., (2006)	Organizational capacity to absorb the impact and recover from the actual occurrence of an extreme weather event.	Capacity Absorb
Linnenluecke, Griffiths, & Winn (2012)	The capacity to rebound, 'to come back' from adversity, uncertainty, conflict, failure or even positive change.	Capacity Bounce back Adverse event Uncertainty
Luthans, (2002)	The ability of an individual or organisation to expeditiously design and implement positive adaptive behaviours matched to the immediate situation.	Ability Adapt
Mallak, (1998)	Resilience can be a useful capability of Organizations because it offers the ability to deal with emergencies and crises.	Capability Ability Crises
Morales et al., (2019)	It offers the ability to deal with emergencies and crises.	Ability Crises
Patriarca, et al., (2018)	A combination of four cornerstones: monitoring, responding, learning and anticipating.	Monitor Respond Anticipate Learn
Pollock, (2016)	An organisation's strong sensitivity to perturbations on any scale.	Sensitivity Adverse events
Sutcliffe & Vogus (2003) Vogus & Sutcliffe, (2007)	An organizational level phenomenon is the power of organizational units to resume, rebound, bounce back, or positively adjust untoward events.	Organizational level phenomenon Resume Rebound Bounce back Adjust Adverse events
Tengblad & Stefan, (2019)	Organizational resilience is a multidimensional phenomenon that can be understood as traits, processes, capabilities and resources simultaneously.	Multidimensional phenomenon Traits Processes, Capabilities Resources
Tengblad, (2018)	The capacity of a company to over time become a selected variation in the	Capacity Environment

	marketplace.	
Vogus & Sutcliffe, (2007)	The maintenance of positive adjustment under challenging conditions such that the organization emerges from those conditions strengthened and more resourceful.	Adjust Resourceful Growth
Weick & Sutcliffe, (2001)	It comprises coping skills, which materialise when events get outside of normal operational boundaries, and knowledgeable people who can self-organise into ad hoc networks to provide expert problem-solving.	Cope Adverse events Problem -Solving
Weick, (1993)	Resilience in organisations seeks to promote competence, restore efficacy, and encourage growth through the behavioural processes of mindful organizing enacted by front-line employees; therefore, a resilient organisation is one that is able to do this on a sustainable basis.	Restore Growth Competent Behavioural process Mindful
Wildavsky, (1991)	The capacity to cope with uninvited events and bounce back once they occurred while he interpreted anticipation as predicting and preventing potential dangers before the damage.	Capacity Cope Adverse events Bounce back Prevent
Williams et al. (2017)	The process by which an actor (i.e. an individual, organization, or community) builds and uses its capability endowments to interact with the environment in a way that positively adjusts and maintains functioning prior to, during, and following adversity.	Process Capability Environment Adjust Adverse event
Xiao & Cao, (2017)	Organizational resilience is a multi-level construct and influenced by many factors, many levels.	Multi-level construct

Source: Developed by the author (2021)

#### 4. DISCUSSION

Along with Holling's work (1973), ecological definitions of resilience came into the field (Pimm, 1984; Alwang & Siegel,

2001; Walker, et al., 2002; Langemeyer, Madrid-Lopez, Beltran & Mendez, 2021).

Resilience is a multidimensional, socio-technical phenomenon about how individuals or groups manage uncertainty. Thus, it is used in a wide variety of fields including ecology, psychology, supply chain, strategic management and safety engineering (Bhamra, Dani, & Burnard, 2011) which has again led it to be difficult to form a generalized definition and a sound measure (Pollock, 2016). With the increased frequency and intensity of catastrophic events that threaten the survival of businesses, the concept of “organizational resilience” was born. Organizations demonstrate a greater sensitivity to perturbations on any scale. Hence, resilience has become a principal feature of any modern-day organization.

Weick (1993) was the first to attribute the resilience concept to the organizational context. In his work, “The Collapse of Sensemaking in Organizations: The Mann Gulch Disaster”, he revisited the tragedy of 13 men’s death causing the Mann Gulch fire disaster in Montana on August 4, 1949, presented by (Maclean, 1992) in the award-winning book “Young Men and Fire”. There, Weick questioned, “Why do organizations unravel?” and “How can organizations be made more resilient?” (1993, p. 628). He proposed four sources of resilience that make organizations/groups less vulnerable to disruptions. They

are improvisation & bricolage, virtual role systems, the attitude of wisdom, and respectful interaction (Weick, 1993). Along with this foundational application of “resilience” in the organizational context, a branch of the resilience body of knowledge has emerged and evolved besides its presence in numerous other fields.

OR was initially viewed in the term of coping skill of an organization. Weick, Sutcliffe, & Obstfeld (1999) procreated the said idea by theorizing that the OR comprises coping skills, which materialise when events get outside of normal operational boundaries, and knowledgeable people who can self-organise into ad-hoc networks to provide expert problem-solving. Resilient was then better understood by practitioners as the organizational capacity to withhold a negative event without damaging its ability to remain in the business.

Sutcliffe & Vogus (2003) viewed OR as a phenomenon at the organizational level that empowers organizational units to resume, rebound, bounce back, or positively adjust untoward events. This interpretation is mostly in line with the general understanding of what “resilient” is. Yet, the modern conceptualization of the term denotes not only bouncing back but also growing or becoming even better after facing a disaster as proposed by Kendra &

Wachtendorf (2003). They interpreted OR as a set of attitudes about desirable actions by organisational representatives, as it is about developing new capabilities. It is believed that the learning gained by facing untoward events expands the capacities of the organization by means of developing new capabilities. Luthans (2002) also came with a similar interpretation of OR, as the capacity to rebound, 'to come back from adversity, uncertainty, conflict, failure or even positive change's. Hence, being resilient means becoming even stronger and more capable than ever after confronting a devastating event.

Linnenluecke and Griffiths (2012) interpreted OR as a process containing three stages namely; anticipation, coping, and adaptation. They develop the Relative OR Scale to assess the OR (Figure 1). Achieving success in dealing with challenging events is usually progressive and incremental. Hence, treating OR as a process is virtually meaningful. In the meantime, some authors have viewed OR as both a dynamic process and an outcome of strategies (Cascio, 2009; Pollock, 2016). Pollock stated that an organization's strong sensitivity to perturbations on any scale is OR. This interpretation is unique among the others as it holds dual views of organizational resilience; a process and an outcome. However, they haven't

distinguished when and where the OR is supposed to perform the different roles; process or outcome.

Banahene, Anvuur, & Dainty (2014) stated OR as a capability that enables organizations to adjust to perturbation, moderate the effects of risk and uncertainty and take advantage of emergent opportunities. Furthermore, it was noted that the existing literature identified OR principally in relation to stable and permanent organizations. However, projects of temporary, cross-functional, and dispersed nature were not well represented in the present body of OR literature. They argued that the characteristics of project organizing, diversity in resilience definitions and dependent nature of resilience make the application of OR in project organising challenging (Banahene, Anvuur, & Dainty, 2014). Similarly, British Standards Institution (BSI) (2014) viewed OR as being adaptable, competitive, agile, and robust. Both definitions had counted on the organization's flexibility in dealing with crisis situations. However, the BSI's definition meant this to be a long-lasting ability with a passion for competitiveness.

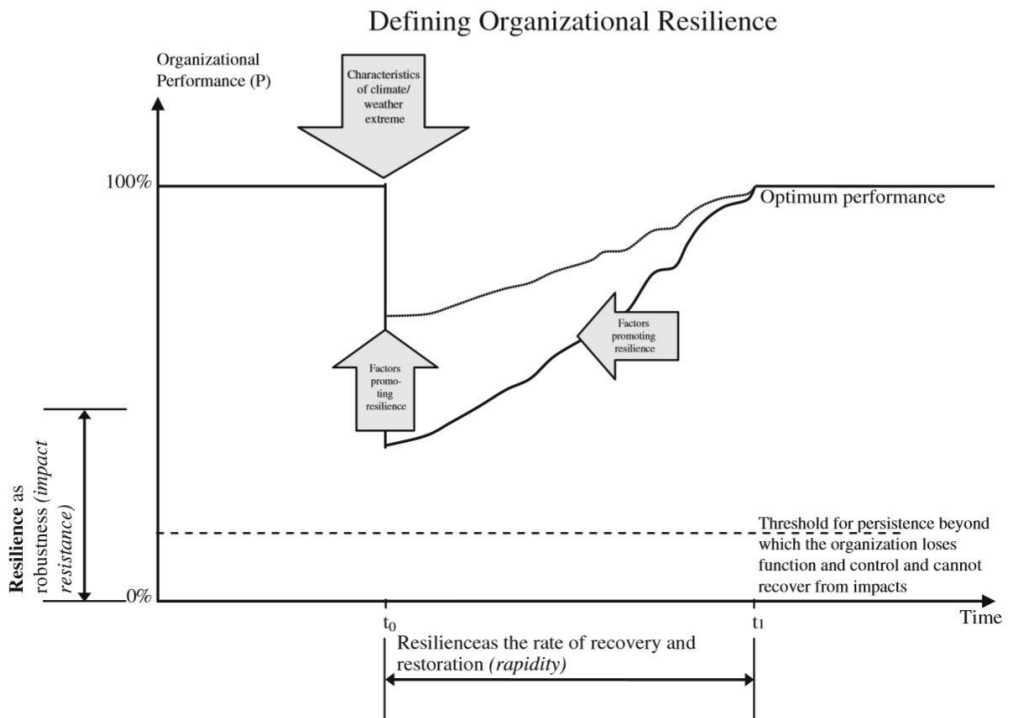
In 2013, Lee, Vargo, & Seville defined OR as a multidimensional, socio-technical phenomenon that addresses how people, as individuals, or groups, manage uncertainty. Weick & Sutcliffe's (2001) view on OR



shows greater compatibility with Lee, Vargo, & Seville's (2013) understanding of the same. For them, OR is likely to be achievable only when it is backed by strong leadership (Lee, Vargo, & Seville, 2013) and great leaders with stronger resilient capacities would pull back their organizations from disasters and make them survive and thrive. Similarly, Weick et al. (1999) identified the need for knowledgeable people to aid the organization in finding the recovery plans.

Researchers view organizational resilience as a relatively new field

of research and practice. It is being applied to understand the adaptive capacities of organizations faced with unexpected events and uncertainties in the context of complexity (Jiwani & Milley, 2009). This heavily applies in crisis and emergency management. In this context, resilience helps organizations to achieve their objectives and fulfill their core purpose. The resilient organization can anticipate, respond and adapt to acute or sudden shocks and chronic or incremental changes so that it survives and prospers into the future (BSI, 2014).



**Figure 1: Defining Organizational Resilience**

Source: Linnenluecke, M.K., & Griffiths, A. (2012). Assessing organizational resilience to climate and weather extremes: complexities and methodological pathways. *Climatic Change*, 113, 933–947. <https://doi.org/10.1007/s10584-011-0380-6>

Many definitions in general stress resilience as a means of recovering from disasters. Therein, adaptive capacity is an essential component of resilience because it reflects the learning aspect of the organization in response to crises (Carpenter & et al, 2001). Organizations that are not learning from the crises will remain crisis-prone. In contrast, crisis-prepared organizations keep learning and become adaptive to crises. Crisis orientation of organizations thus can be used in grouping organizations based on their adaptive capacity (Pauchant & Mitroff, 1992). Additionally, organizations can be placed in a continuum between crisis-prone and crisis-prepared, based on their adaptive capacity, which is a predominant requirement to be resilient (Pollock, 2016). Consequently, many authors found adaptive capacity as a lead predictor of organizational resilience (Garvin, 2000; Smith & Elliott, 2007; Pollock, 2016).

Resilient organizations are crisis-prepared. They learn from their own crises and as well from the experience of others. These learnings assist them in avoiding failures. They, on the other hand, sharpen the organization's proactiveness (Smith & Elliott, 2007). Therefore, resilient

organizations can be branded as "crisis-prepared". For this reason, nuclear power plants and aircraft carriers are often referred to as high resilient organizations. But many organizations today are less resilient and lacking the ability to withstand disruptions (Pollock, 2016). This may attribute to the excessive rate of failures in the business field despite several helping arms.

While distinguishing reactive resilience and proactive resilience, Somers (2009) noted that it is often followed by an event or crisis. Others who acknowledged the reactive nature of the OR are Mallak (1998) and Hollnagel (2006). Mallk (1998; 148) described resilience as 'the ability of an individual or organization to expeditiously design and implement positive adaptive behaviors matched to the immediate situation". Parallely, Hollnagel (2006; 13) showed OR as an intrinsic ability of an organization (system) to maintain or regain a dynamically stable state, which allows it to continue operations after a major mishap and/or in the presence of continuous stress. In 2011, Hollnagel and others suggested four dimensions of OR, namely, anticipation, monitor, respond and learn (Figure 2).



**Figure 2: Four Dimensions of Organizational Resilience**

Source: Hollnagel, E., Paries, J., David, D. W., & Wreathall, J. (Eds.) (2011). Resilience engineering in practice: A guidebook. Farnham, Surrey, UK: Ashgate.

A resilient socio-technical system possesses the abilities to Respond, to Monitor, to Anticipate, and to Learn (RMAL Model). The ability to respond is being able to respond to variations (both regular and irregular) by implementing predefined actions or altering the present functions. The ability to monitor is being vigilant of possible effects on the system's performance. Next, the ability to learn is being able to learn from experiences, (correspond to double-loop learning concept by Argyris & Schon (1974) as cited by Hollnagel, (2015, p. 4). The ability to anticipate is the capacity to foresee the future in terms of possible challenges and opportunities (Hollnagel, 2015).

An organization equipped with these abilities can better analyze and solve problems in a structured and practical way (Tengblad, 2018; Tengblad & Oudhuis, 2019; Torgeir, Stian, Ragnar, & Andrew, 2019). Additionally, those organizations would function well in the future as a result of learning gained from past experiences. Tengblad & Oudhuis (2019) argued that the OR is not only a capability but also a philosophy that spelled out how organizations can face adverse, complex, and uncertain events in a responsible and proactive way. Hence, it may even arise even prior to the disaster. They define OR as;

*A resilient company or organization uses its financial,*

*technical, and social resources: 1. to develop long-term skills and competences and 2. in an efficient, reliable and flexible manner 3. in order to manage challenges and exploit opportunities (N & N, p. 8; as cited in Tengblad & Oudhuis (2019, p.3)).*

The line of sequential activities suggested here is from a process; the OR thus resembles a process rather than capacity. Both Hollnagel's (2006) and Mallk's (1998) definitions emphasized the reactive nature of OR. Having armed with flexibility, first-rate communication, and the ability to mobile resources are thus considered as the critical success factors of the effective reactive action plan. They also support the process-based nature of the OR. Inconsistently, others interpreted it as the ability to foresee the crisis before its occurrence and the ability to cope with it if it happens to meet with the crisis. Leveson, et al. (2006) describe their proactive-flamed OR as the ability of systems to prevent or adapt to changing conditions in order to maintain control. As for them, resilient organizations should be capable of early detecting and avoiding unfavorable conditions and adapting them during their real-time occurrence and keep responding even after the disruption. This explains the continuous cause of an organization that must be maintained throughout its life

span. Therefore, regarded as managerially effective and operationally challenging. In the same tone, Hale and Heijer defined OR as "the characteristic of managing the organization's activities to anticipate and circumvent threats to its existence and primary goals" (2006; p. 35). Hence, to be resilient, organizations should develop their anticipating ability and adaptive capacity. The two approaches were seen distinctively (Wildavsky, 1991) and as well complementarily (Comfort, Sungu, Johnson, & Dunn, 2001; Kendra & Wachtendorf, 2003; Boin & Lagadec, 2000). Wildavsky (1991) viewed resilience as the capacity to cope with uninvited events and bounce back once they occurred while he interpreted anticipation as predicting and preventing potential dangers before the damage. He posited that the strategies of anticipation work best against known problems, whereas strategies of resilience work best against unknown ones. Each strategy is appropriate to specific conditions. Resilience strategies are appropriate when there is greater uncertainty and anticipation strategies apply best when the environment is in a steady-state and predictable mode.

The OR was defined with a closer link with environmental interactions by Williams, Gruber, Sutcliffe, Shepherd, & Zhao in 2017. They stated OR as the

process by which an actor (i.e., an individual, organization, or community) builds and uses its capability endowments to interact with the environment in a way that positively adjusts and maintains functioning prior to, during, and following adversity (p. 742). Resilient organizations should emphasize organizational learning as organizational learning gained from their own experience and others' experiences help to generate greater organizational resilience (Smith & Elliott, 2007). In the organizational literature, it is cited as an essential

organizational competence for modern organizations that describes one of the most important inherent characteristics that cause that business success (Naswall, Kuntz, Hodliffe, & Malinen, 2013; Britt, Shen, SinClair, Grssman, & Klieger, 2016). Tengblad (2018) simply defined OR as the capacity of a company to over time become a selected vibration in the marketplace. While proposing the new REC model of OR, he identified Reliability, Efficiency, and Change capacity as the main qualities of a resilient organization (Figure 3).



**Figure 3: REC Model of Organizational Resilience**

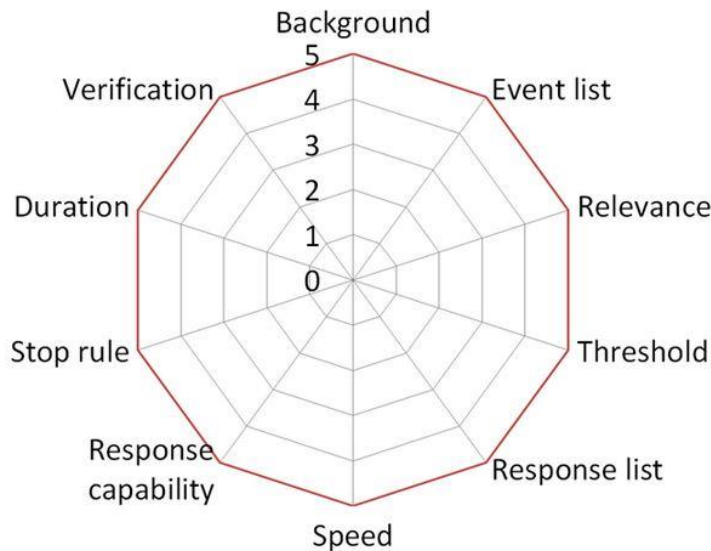
Source: Tengblad, S. (2018). Organizational Resilience: Theoretical Framework. In S. Tengblad, & M.Oudhuis, The resilience framework: Organizing for sustained viability (pp.19-38). Springer Nature Singapore Pte Ltd.

In REC model, reliability refers to the operational safety, sound risk management, product &

service quality, and quality of customer care. Efficiency measures how productive the

organization is in creating value for its stakeholders. Next, the change capacity refers to the flexibility and innovation potentiality of the organization. These three then are proposed to use as the key predictors of OR. Yet, the author held that the proper balance between three qualities might vary from organization to organization, industry to industry, and over time (Tengblad, 2018, p. 35). The REC model well addresses the organizational level capabilities

to become resilient basically at the present level. The “resiliency” as a system property is always coupled with an ability of a system to foresee the future based on existing trends and prepare itself to meet the challenges on its way (Hollnagel, 2006; Hollnagel, Paries, David, & Wreathall, 2011). Yet, the REC focus on the current state of performance doesn’t explicitly reflect the organization’s ability to anticipate and prepare for a possible future challenging event.



**Figure 4: RAG Model of Organizational Resilience**

Source: Chuang S, Ou J-C, Hollnagel E, Hou S-K (2020) Measurement of resilience potential - development of a resilience assessment grid for emergency departments. *PLoS ONE* 15(9): e0239472. <https://doi.org/10.1371/journal.pone.0239472>

In par with the four-dimensional RMLA model of Hollnagel et al. (2011), he came with RAG –

Resilience Analysis Grid in 2014 (Figure 4) which can assess the resilience systems (i.e. an

organization or an individual). They correspond to the stages of RMLA model (Hollnagel, et al., 2011) namely; Respond, Monitor, Learn and Anticipate (Figure 2). RAG intends to measure the resilience performance of a system, which, indeed, as for him, is not a quality of a system but the ability to succeed under varying conditions. Hollnagel (2015) expressed this in his work of RAG in 2015, as;

*.....the ability of systems to succeed under varying conditions ..... The purpose of the rather roundabout definition given above is to avoid statements such as 'a system is resilient if ...', since this narrows resilience to a specific quality. (Or even worse, that 'a system has resilience if.....) ..... (Hollnagel, 2015, p.1).*

In 2019, Hollnagel emphasized the same notion in his work of "Invisible trade-offs and visible consequences" by stressing the importance of developing the resilience culture within the organization.

High Reliable Organizations (HRO) is an analogous concept of managing crises and ensuring system safety, in which a culture of reliability is promoted to prevent operational failures (Porte, 1996). They are known to operate nearly error-free in extremely challenging and uncertain environments, where complex procedures, technology,

and guidelines are used to manage complex systems and conditions (Enya, Pillay, & Dempsey, 2018). Industries with a high level of risk profile such as construction in which the fatality rate is very high, gas & oil refining, aircraft, and nuclear industries often regarded as HRO and expected to function at an exceptionally high level with little or no accidents.

The theory of HRO once originated at the Berkeley campus of the University of California and has been studied by many organizational scholars to assess its application over a wide range of high-risk organizations. Karl E. Weick of the University of California (1980s) together with his team investigated the behaviour of organizations that operate in highly hazardous environments and came out with a set of traits they share commonly (Weick, 1987). Weick et al. later related the concept of collective mindfulness as an approach to ensure a safe culture at HROs (Enya, Pillay, & Dempsey, 2018). They identified a set of traits that explain the behaviour of HROs. They are;

1. Preoccupation with failure,
2. Reluctance to simplify,
3. Sensitivity to operations
4. Commitment to resilience, and
5. Deference to expertise (Weick & Sutcliffe, 2001).

Four cornerstones of OR were used by Patriarca, Gravio, Costantino, & Falenami (2018)

to develop a semi-quantitative framework of OR based on which the resilient profiles can be generated. They put resilience at the organizational level as the combination of these four cornerstones: monitoring, responding, learning and anticipating (Patriarca, et al., 2018, p.266 ). The outcome was a modified model of OR based on the Resilient Analysis Grid (RAG) of Hollnagel's (2011). The proposed construct of Patriarca et al. (2018) holds greater similarities with Hollnagel's work and extends it up an Analytical Hierarchy Process in which weaknesses and strengths of the organizational resilient profiles can be spotted. Additionally, the new model allows managers to target the resiliency phase by phase rather than an incremental uptake.

The diversity is the organizational context that has accounted as an essential component of innovation propensity, decision effectiveness, anticipating ability etc. Its theoretical connection with OR has been questioned by Duchek, Raetze, & Scheuch (2020) and proposed a framework for resilience-enhancing diversity management. They emphasised the role of diversity in enhancing the resilient capabilities of the organizations throughout the three-stages process of OR (Anticipation, Coping and adaptation).

In 2019, Morales, Martinez, Gomez, Lopez, & Arguelles developed a model of resilience in which factors of OR were tested. With the support of existing theoretical sources and empirical evidences of 159 Mexican manufacturing organizations, they concluded adaptation capacity as the first-order antecedent of OR, whereas adaptation capacity was determined by resilient leadership, organizational capacity & management, and organizational culture. Additionally, they offered the individual level contributors for OR, namely, awareness cognition, organizational learning, and psychological alignment. Yet, the tested model only incorporated organizational level antecedents and thus included into the final model. Among the existing theoretical frames, this is the only model which used a single first-order factor to predict the OR. That was adaptation capacity, whereas this was engaged in many of the models as adaptive capacity (Hale & Heijer, 2006; Malik & Nilakant, 2011).

Resilient organization has the ability to intelligently anticipate and manage swiftly, has the capacity to learn from challenges and seeks opportunities to enhance its capability to adapt, bounce back faster, smartest and stronger (Janellis Pvt Ltd, 2015, p. 1). Four groups of OR indicators were proposed as



benchmarking indicators specifically, risk, readiness, response and assurance. The interpretations of the four main themes of OR reported by Janellis in 2015 are relatively identical to Hollnagel et al.'s (2011) classification of attributes of a resilient sociotechnical system; monitor, to anticipate, to respond and to learn. Nevertheless, empirical support was not presented for the benchmark OR indicators.

Vogus & Sutcliffe (2007) stated OR as an organizational level phenomenon as the power of organizational units to resume, rebound, bounce back, or positively adjust untoward events. They have defined OR as the maintenance of positive adjustment under challenging conditions such that the organization emerges from those conditions strengthened and more resourceful (p. 3418). Many emphases the enhanced capabilities of organizations in the forms of experience, learning, and knowledge.... etc. after confronting catastrophic events. OR, hence is more than a specific adaptation and often involve capacity building of the organizations.

Kahn et al., (2018) defined OR as an organization's ability to absorb strain and preserve or improve functioning, despite the presence of adversity. this modest definition simply put the current and future abilities of an

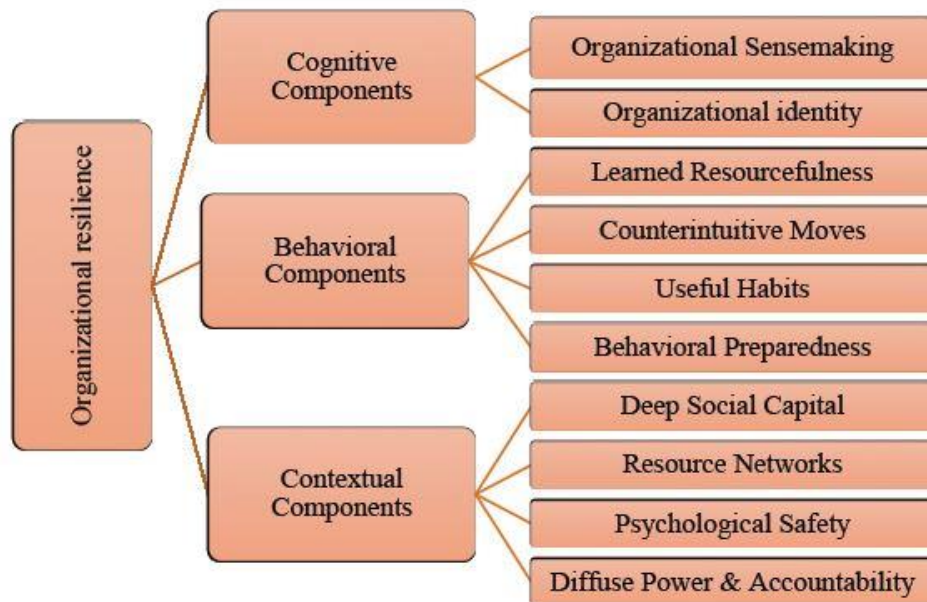
organization to bypass the troublesome events. They used three-staged process of integration, disavowal and reclamation; the products of different strains in specific parts of an organization. This idea too follows the process approach of OR.

OR is viewed as a means of shaping the competitive position of the organization due to the organizational learning supported by the uninvited occurrences. As such, Oliveira, Teixeira & Werther (2013) defined OR as continuous renewal of competitive advantages. Even if this interpretation doesn't incorporate any essential capacities that resilient organizations should possess, it summarised the overall outcome of organizational level resiliency. They enlisted this idea with four dimensions namely, leadership and followership interplay, organizational culture, strategic planning and making innovation a way of life. Apparently, all these dimensions targeted at measuring how good organization is in finding new ways of performing usual functions which is fundamental for overcoming devastating events.

Linnenluecke has contributed much in developing the OR construct. He and his colleagues have defined OR as the organizational capacity to absorb the impact and recover from the actual occurrence of an extreme

weather event (Linnenluecke, Griffiths, & Winn, 2012). In contrast to other definitions, OR was defined specifically within the context of extreme weather events whereas others have conceptualized a more general view of damaging events which covers a wider range of disturbing incidents. For instance, some have accounted even an expiry of core functional member who was holding a greater responsibility of key organizational functions in to adverse profile of the organizations. They proposed a three-dimensional framework of OR in which simple extreme, complex extreme and unique or single extreme weather events are assessed. Along with that they came up with a five-stages process of organizational adaptation and resilience.

A theoretical framework would become popular and operationally sound when it is specific and less ambiguous. The 3-component resilient capacity framework of Lengnick-Hall and others gained much popularity due to its specificity. Furthermore, it was supported by empirical evidences too. Their model was based on the definition of OR; a unique blend of cognitive, behavioural, and contextual properties that increase a firm's ability to understand its current situation and to develop customized responses that reflect that understanding (Lengnick\_Hall & Beck, 2003; Lengnick-Hall & Beck, 2005; Lengnick-Hall & Beck, 2009; Lengnick\_Hall, Beck, & Lengnick\_Hall, 2011). Figure 5 presents the 3-component resilience framework of Lengnick-Hall and others.



**Figure 5: The 3-component resilience framework**

Source: Lengnick-Hall, C.A., Beck, T.E. and Lengnick-Hall, M.L. (2011), Developing a capability for organizational resilience through strategic human resource management, *Human Resource Management Review*, vol.21 No.3, pp.243-255.

Here cognitive, behavioural and contextual components constitute the OR. Cognitive part represents the organizational ability to sense the potential adversities, behavioural component describes the established behaviours that enable the organization to respond and, finally, contextual resilience measures the relational strength of the organization in fighting with the adversities. Later in 2011, Lengnick-Hall et al. interpreted OR as a transformation process. They stated that the OR is a firm's ability to effectively absorb,

develop situation-specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organization survival (Lengnick-Hall et al., 2011). Their definition and framework gained much attention by OR scholars hence effectively adopted for a wider range of OR researches (Akgun & Keskin, 2014). However, Yang's (2019) content analysis showed that some sub indicators are not empirically associated with OR.

Later, in Theory of dynamic capabilities of Teece et al. (1997) and Teece (2007) viewed OR as a pattern of dynamic capabilities of an organization (Yang, 2019). Three areas of dynamic capabilities are merged to form the dynamic capabilities that aid in handling the environmental uncertainties, namely, environmental dynamism, capabilities, and micro foundation.

Many viewed OR an umbrella concept denoted for diverse perspectives and approaches

#### 4. CONCLUSION

This review aimed at revisiting the definition of OR to distinguish it from other related facets. OR is a phenomenon at the organizational level. It empowers organizational units to resume, rebound, bounce back, or positively adjust untoward events (Sutcliffe & Vogus, 2003). It has proven to be neither an outcome nor the process but both (Cascio, 2009; Pollock, 2016). It demands more than “bouncing back” (Linnenluecke, 2015; DesJardine, et al., 2017). Again, OR is not just adaptation but more than the adaptation as it stresses subsequent growth followed by a devastating event (Carpenter & et al, 2001; DesJardine, Bansal, & Yang, 2017). Despite their highly correlated nature, OR is not either crisis management (Mallak, 1998; Somers, 2009; Hollnagel, 2006). OR must be necessarily a

(Burnard and Bhamra 2011; Duchek, 2014, 2019; Linnenluecke 2017; Williams et al. 2017). Some argue that the OR is an outcome rather than a process, management system, strategy or predictive measurement (Gibson & Tarrant, 2010). They perceived it as an outcome of complex environmental factors which included the organization’s risk culture. Thus, OR is known as the ability to anticipate, prepare for, respond, and adapt to shocking events (both sudden and gradual changes).

proactive and continuous organizational process, but it should not be reactive following a devastating event. Coping skill can’t attribute to the OR as it omits the preceding and succeeding stages of OR; the anticipation, and the adaptation respectively. OR is not either becoming stable as it calls for moving ahead (Hollnagel, 2006). Calling OR a “buffer capacity” seems unrealistic once the OR’s ability to thrive after a shocking event is concerned (Arrow, et al., 1995; Cardona, 2003). OR is not only a set of attitudes but also enactive behavioural movements towards gaining superficial capacities (Kendra & Wachtendorf, 2003; Hillmann & Guenther, 2021). "Getting stronger" is fundamental to be resilient. Collective organizational capability of adaptation, competitive, agile and robustness are prime

determinants of OR. Strong leadership and organizational learning & knowledge have identified as a complementary fact for OR (Lee, Vargo, & Seville, 2013). An organization equipped with these abilities can better analyse and solve problems in a structured and practical way (Tengblad, 2018; Tengblad & Oudhuis, 2019; Torgeir, Stian, Ragnar, & Andrew, 2019). Accounting the continuous and progressive nature of OR, it can be interpreted as not only a capability but also a philosophy at organizational level which spelled out how organizations can face adverse, complex, and uncertain events in a responsible and pro-active way. Theoretical implications suggest inclusion of the identified aligning criteria to any conceptualization or measures of OR while one should avoid alike but, disjoining criteria for interpretational and measurement purposes. Practical implications demand for organizations to primarily focus on the long-term continuous process of meeting the challenging environmental occurrences rather on discrete capabilities to respond to devastating events.

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## **The Impact of Budgetary Management Process on Organizational Performance: Special Reference to Small and Medium Enterprises in Hambantota District, Sri Lanka**

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### **Abstract**

The budgetary management process has been a part of management control system of the organizations. This process encourages Owners, Managers and Accountants to plan the stakeholders involved provides information for improved organizational performance. The purpose of this research was to examine the impact of budgetary management process on organizational performance in the Small and Medium Enterprises (SMEs) in Hambantota district. The researcher has collected data by using a structured questionnaire. Owners, Managers and Accountants have been selected as respondents to collect primary data for the research. The study was considered with four hypotheses which were constructed to reveal whether the independent variables of budgetary coordination, budgetary monitoring, budgetary communication and budgetary evaluation are significantly influence on the dependent variable of organizational performance of SMEs in Hambantota district. The regression results revealed that the budgetary coordination and budgetary monitoring have the highest impact level on organizational performance while the budgetary communication has the least impact level. Further regression results showed that budgetary evaluation has insignificant effect on organizational performance, while this confirms budgetary coordination, budgetary monitoring and budgetary communication have positive and significant impact on organizational performance.

**Keywords:-** Budgetary coordination, Budgetary Communication, Budgetary Monitoring, Budgetary Evaluation and Organizational Performance.

## 1. INTRODUCTION

Budgetary management practices are an integral part in making decisions in handling the financial resources in an organization. The effective budgetary management system will reduce the difficulties arising in handling sales, production, direct materials, direct labour, manufacturing overheads, selling and administration costs in monetary terms. Thus, improving budgetary management of an organization enhances the financial, managerial and business performance. The goal of budgetary management is utilizing the resources in an efficient and effective manner to achieve the predetermined goals and objectives in an organization. Small and Medium Enterprises (SMEs) are gaining wide acceptance as viable drivers of economic growth. According to Karunananda and Jayamaha (2011) when promoting growth and social development of Sri Lanka, SMEs can be identified as an important sector and SMEs are the major component of the economy in a country. According to Dasanayaka (2009) SMEs of the formal sector generate high income through high productivity and creates a suitable life for workers and owners. Today the Sri Lankan government is facing a critical issue of providing employment opportunities for General Certificate of Education Advance Levelpromi and above. The development and growth of SMEs in Sri Lanka provides a solution to this problem because the rate of

educated unemployment remains proportionally higher than the rate for less-educated workers in Sri Lanka.

Abeygunasekara and Fonseka (2012) mentioned that SMEs are necessary engines for achieving national development goals such as economic growth, poverty alleviation, democratization, economic participation, employment creation, strengthening the industrial base and local production structure. Wickramasinghe (2011) stated that SMEs are considered as an engine of growth and an essential part of a healthy economy. Further researcher discovered that although SMEs role in the economy is important, their failure rate is considerably high due to a number of reasons. The reasons for failures include poor management skills of the owner and managers, poor accounting records, lack of access to credit and information technology, low level of technology and absence of technology. According to Bandara (2016) due to lack of proper budgetary control, inappropriate financial and human capital management, lack of up-to-date reliable accounting data and inadequate commitment of owners for business management, 45% of SMEs are failed. Due to the development and expanding of the business number of transactions increased and it is difficult to run the business without a proper budgetary management system.

Therefore, keeping a proper budgetary management system is essential for SMEs. Today there is a developing world and with the development of technology, intensive competition, global market and e-commerce, the operating environment has been developed. Kimani (2014) mentioned that budgeting includes the formation of predetermined goals, reporting results of actual performance and evaluation of performance. According to Siyanbola and Tunji (2013) with the introduction of proper budgetary system has many advantages such as improving profit and financial position through the improvement of planning and controlling, finding most profitable course of action by directing organization through meeting its primary objectives, managing organization for its survival, preparing effective plans to solve operating and financial problems, translating objectives into actions, coordinating the different factors of production for satisfying all stakeholders and communicating the organizational objectives across the firm can be identified.

Budget is a detailed plan that expressed in quantitative terms, that specifies how resources will be acquired and used during a specified period of time and budget is prepared for the primary purposes of planning, facilitating communication, coordination, allocating resources, control profits and operations, evaluating

performance and providing incentives. Most organizations used the budget as a tool of corporate internal control, it helps to prepare future plans and allocate the comprehensive resources efficiently and effectively. According to John and Ngoasong (2008) budgeting and integrating strategic management practices help to the enhancement of the competition and organizational performance and budget creates competitive advantages through the management functions such as forecasting, planning, coordination, communication, motivation, evaluation, control, and decision making. According to Tanase (2013) through number of proper budgeting benefits can be identified as establishing a good communication and maintaining a useful exchange of information, allocating resources efficiently, helping to obtain more reliable, accurate and relevant budgets, motivating subordinates, increasing employee satisfaction, increasing organizational commitment, determining subordinates to be more dedicated in achieving their objectives and improving individual and entity performance. Neely (2001) stated that although there are a number of benefits can be identified by maintaining a budgetary process, there is a big challenge to implement a proper budgetary management practices in SMEs. Further, due to time-consuming and barriers to change it is somewhat difficult to implement the budgeting process in

organizations. Siyanbola and Tunji (2013) found that due to the poor knowledge of executives and employees and as a result of technical problems in forecasting future, implementing a budgetary process in organization is challengeable.

Silva and Jayamaha (2012) conducted research regarding the budgetary process and organizational performance, but it was limited to the apparel industry. Fonseka and Perera (2014) studied that the impact of planning and control sophistication on the performance of SMEs in Sri Lanka, but it does not cover all the functions of the budgetary process. A number of empirical studies in international context conducted by scholars such as Harelimana, 2017; Koech, 2015; on the impact of budgetary management process on financial performance, but they are related to various sectors except for SMEs. According to the above-mentioned facts in the Sri Lankan context there is a limited number of local researches related to this research area and even though there are number of studies in international context, the budgetary management process on performance is not much clear. This study attempts to fill that gap and contributes to the growing literature on the budgetary management process on organizational performance of small and medium enterprises. The purpose of this study is to investigate the budgetary management process on

organizational performance of SMEs in Hambantota district.

#### Problem Statement

The main purpose of SME is earning a profit for its owners by depending on day-to-day transactions. Even though most of SMEs are earned a profit, they fail to manage their profit in a proper way. Many business organizations in the world do not give budgetary management the prominence it deserves in spite of its varied importance. The problem of budgetary management has existed for too long. This problem is still continuing. Evidence has found that although SMEs role in the economy is important, their failure rate is considerably high due to a number of reasons. But due to the development and expansion of business number of transactions are increased and it is difficult to run the business without a proper budgetary system. Therefore, keeping a proper budgetary system is essential to SMEs.

Many types of researches have done related to SMEs in Sri Lanka such as Working capital management practices of SMEs in Sri Lanka (Bandara & Rathnasiri, 2016), Financial practices and performance of SMEs (Karunananda & Jayamaha, 2011), Management practices of selected SMEs in Hambantota district (Mangaleswaran, 2015), Financial reporting practices in SMEs (Rathnasiri, 2014) and Determinants of accounting system



in SMEs (Wijewardana, 2018). Though some of these researches discussed on management practices up to some level among these researches there is no any study have been done on the impact of budgetary management process on organizational performance of SMEs in Sri Lanka. Chircir and Simiyu (2017) found that there is a significant positive relationship of budgetary monitoring and budgetary evaluation on financial performance through the study on the influence of the budgetary control system on the financial performance of Almasi beverage group limited, Kenya. But those researches are not covered all the functions of the budgetary process. When considering the above researches which were examined in the Sri Lankan context although there are a number of researches in the SMEs sector, they are not related to the impact of budgetary process on financial performance and even though there are few kinds of researches related to budgetary management process on financial performance they are not in the SMEs sector and all the functions of the budgetary process are not covered.

Researchers have not given attention to the problem of lack of proper budgetary management system in SMEs. Hence this study intends to fill those gaps. This is also one of the issues based on this. There are a number of researches on the impact of the budgetary process on firm performance, but they are not related to the SME

sector. Based on the factors discussed above, the researcher identified an empirical research gap. Though there is a number of studies related to the impact of the budgetary process on organizational performance the level of their impact and the relationship between the functions of the budgetary process and organizational performance is not much clear. Hence the researcher intends to fill this gap by identifying the budgetary management process on organizational performance of SMEs in Hambantota district. Further researcher intends to examine the impact of budgetary management process on organizational performance of SMEs.

When considering the above circumstances, it is clear that there is a problem to identify the impact of budgetary management process on organizational performance of SMEs in Hambantota District of Southern Province. Therefore, the researcher identifies the research problem as “Identifying the budgetary management process on organizational performance of SMEs in Hambantota District”.

The international context although there is a number of researches related to the impact of budgetary management processes on organizational performance, but they are not related to the SME sector. Therefore the researcher intends to carry out research to fill this research gap by identifying the

budgetary management process on organizational performance in SMEs in the Hambantota District.

### **Objectives**

Main objective of the study is to identify the impact of budgetary management process on organizational performance of SMEs in Hambantota District.

To achieve the main objective, the following sub objectives are considered.

- To identify the impact of budgetary coordination on organizational performance of SMEs.
- To identify the impact of budgetary monitoring on organizational performance of SMEs.
- To identify the impact of budgetary communication on organizational performance of SMEs.
- To identify the impact of budgetary evaluation on organizational performance of SMEs.

### **Priority Based Budgeting Theory**

This theory was developed from the work of Kavanagh, Johnson and Fabian (2011). This theory is a modification of Zero-Based Approach. It is suggesting that resources should be allocated due to priorities of corporate events to fulfill the organization's objectives. Further the theory focuses on

organization priorities and allocations to increase growth and savings in budgeting. This is based on through review of services that the budget is intended. This involves the review of the objectives of the services; several thresholds at which the service can operate and the standards that the service is to attain.

Priority Based Budgeting theory suggests that SMEs, just like other organization should prioritize when budgeting to ensure effective budgeting and also let their budgeting process to be guided by proper funding, accountability and transparency at all organizational levels. This theory is relevant to this study for trying to explain how prioritization affects budgeting.

### **Previous Work**

The Impact of Budgetary Management Process on Organizational Performance

A number of empirical studies have been conducted related to the budgetary management process on financial performance. Silva and Jayamaha (2012) researched on budgetary process and organizational performance of the apparel industry in Sri Lanka. 50 companies are selected based on the convenient judgment as the sample and used both primary and secondary data. Based on the regression model researchers revealed that there is a strong positive correlation between the budgetary process and firm

performance. Koech (2015) considered the effect of budgetary control on the financial performance of selected manufacturing companies in Kenya. 50 selected as the sample through the stratified sampling technique and used descriptive research design. Both primary and secondary data used and the researcher found that there is a significant relationship between the budgetary control system and financial performance. Agbenyo et al. (2018) researched on budgeting and its impact on the financial performance of listed manufacturing firms taking evidence from manufacturing firms listed on Ghana Stock Exchange. 51 respondents considered as sample size and primary data used by the researchers. The findings showed that there is a positive relationship between budgeting process and financial performance.

#### The Budgetary Coordination and Organizational Performance

Silva and Jayamaha (2012) examined the budgetary process and organizational performance of the apparel industry in Sri Lanka selecting 50 companies as the sample. The researcher collected data through primary and secondary sources and organizational performance measured using ROA. Regression analysis results showed that there is a high degree of positively significant correlation between budgetary coordination and ROA. Pimpong and Laryea (2016)

investigated on the budgeting and its impact on financial performance related to the case of non-bank financial institutions in Ghana. As sample seven non-bank financial institutions were considered. Primary data used for the study and through regression analysis researcher found that budget coordination has a statistically significant moderate positive relationship on firm performance. Agbenyo (2018) conducted research on budgeting and its impact on the financial performance of listed manufacturing firms considering the evidence from manufacturing firms listed on the Ghana Stock Exchange also they clearly stated that there is a positive relationship between budgetary coordination and financial performance.

#### The Budgetary Monitoring and Organizational Performance

Chircir and SImiyu (2017) conducted a research on the influence of the budgetary control system on financial performance of the Almasi Beverage Group Limited, Kenya. 132 sample has consisted of 21 heads of departments and 111 supervisors. The research was conducted three Coca-cola bottling companies in Kenya. Questionnaires and interviews used to collect primary data and financial statements used to collect secondary information. Research findings showed that there is a significant positive relationship between monitoring and financial performance of

ABGL. Agbenyo (2018) conducted research on budgeting and its impact on the financial performance of listed manufacturing firms considering the evidence from manufacturing firms listed on the Ghana Stock Exchange found that there is a significant and positive relationship between monitoring and financial performance.

#### The Budgetary Communication and Organizational Performance

Pimpong and Laryea (2016) conducted research on budgeting and its impact on financial performance related to the case of non-bank financial institutions in Ghana. The researchers used both primary and secondary methods to collect data and as analyzing tool regression model was used. Seven non-bank institutions selected as the sample. Findings revealed that evaluation has a significant effect on financial performance. Chircir and SIMiyu (2017) conducted a research on the influence of the budgetary control system on financial performance of the Almasi Beverage Group Limited, Kenya. 132 sample has consisted of 21 heads of departments and 111 supervisors. The research was conducted three Coca-cola bottling companies in Kenya. Questionnaires and interviews used to collect primary data and financial statements used to collect secondary information. Research findings showed that there is a significant positive relationship between monitoring and financial

performance of Almasi Beverage Group Limited, Kenya Agbenyo (2018) also identified that there is a significant and positive relationship between evaluation and financial performance.

#### Research Gap

According to the above-mentioned literature, the researcher could determine that there is a relationship between the budgetary management process and organizational performance. But the impact levels are different according to their studies in various research areas. The relationships between variables are also somewhat varied. Hence there is no clear idea on the impact of budgetary management process on organizational performance and what kind of relationship among variables. According to the available research articles in the Sri Lankan context, there is a limited number of studies that carried out to find the impact of budgetary management processes on organizational performance in SMEs. When considering international context although there is a number of researches related to the impact of budgetary management processes on performance, but they are not related to the SME sector. And also there is a limited number of studies related to the impact of budgetary coordination, monitoring, and communication on organizational performance. Therefore the researcher intends to carry out research to fill this research gap by

identifying the impact of budgetary management processes on organizational performance in SMEs in Hambantota District.

### **Contribution of the study**

Mainly the significance of the research on the impact of budgetary management process on organizational performance can be divided into three areas as theoretical, empirical and managerial significance. The heart of the budgetary management system is budgeting. Always efficient budgetary process will guide for the financial performance improvement and development of overall organizational performance occurs due to the efficient budgetary practices. This study will provide a body of knowledge on the impact of budgetary management process on organizational of SMEs in Hambantota district. Recognizing the importance of SMEs in the Southern province is also one of the significances of this study and the findings of this study will serve as important indicators to face future challenges by adopting a budgetary management process with better forecasts.

Not only for small and medium enterprises but also for the other industries may be benefitted with these research findings. This research includes existing literature and knowledge provided to a better understanding of the budgetary management process on organizational performance. The

research findings will provide many advantages for many parties. This study support to management in the decision-making process and finance controlling process. The study provides knowledge for allocating scarce resources effectively and cost reduction of production in the business sector. Research offers sufficient knowledge for the academic sector and society regarding the impact of budgetary management process on organizational performance in SMEs. This study provides guidance to the policymakers to develop policies, procedures, and programs for increasing customers' satisfaction and employees' satisfaction when preparing the budget. The entire nation is finally benefitted by these research findings. Findings and recommendations may be useful to expand small and medium enterprises. Ultimately, the knowledge further contributes as a useful source for future researchers regarding subject matter.

### **2. METHODS**

The study was conducted to analyze the impact of the budgetary management process on performance of SMEs. Quantitative research approach was used to generate findings. This comprise there are four independent variables such as budgetary coordination, budgetary monitoring, budgetary communication and budgetary evaluation. Organizational performance of SMEs is the

dependent variable. Primary data were collected through the questionnaires to answer the research question. According to Sekaran (2003) entire group of people, events or thing of interest that the researcher wishes to investigate is called population. Considering all the SMEs which are registered in the Hambantota District chamber of Commerce the overall research is conducted. It is nearly about 310 enterprises. There is different category of SMEs in Hambantota District such as textiles and footwear, hotel and restaurant, Jewelry, wood and iron furniture, building materials and paints, book and stationery, electrical items and etc.

#### Sample of the Study

The researcher used a simple random sampling method to select the sample. Considering the limited time and resources of the research requirements, this study was selected 80 SMEs as sample to collect data, but only 60 SMEs were responded. Since the inabilities to approach to the population which spreads around 100% SMEs that registered in Hambantota District chamber of Commerce.

#### Method of Data Collection

Primary research is expected to collect data by using questionnaires which are physically distributed to owners, managers and accountants of the selected sample. The questionnaire was designed mainly

in a structured way to determine the impact of budgetary management process on organizational performance of SMEs and it developed both in English and Sinhala languages. It is simple worded questionnaire and consisted of two sections as part A and part B. Part A included general information of respondents such as gender, job position and educational level. Also, it consisted with company details such as the number of employees, nature of the business, the budget covering and reviewing period of the business. The questions that used to measure the independent variables and dependent variable are included in the part B. Here researchers prepared these questions according to 5 points Likert scale order.

Based on literature review following conceptual framework is formed. Budgetary coordination, budgetary monitoring, budgetary communication and budgetary evaluation are independent variables. This framework helps to get an understanding about the study.

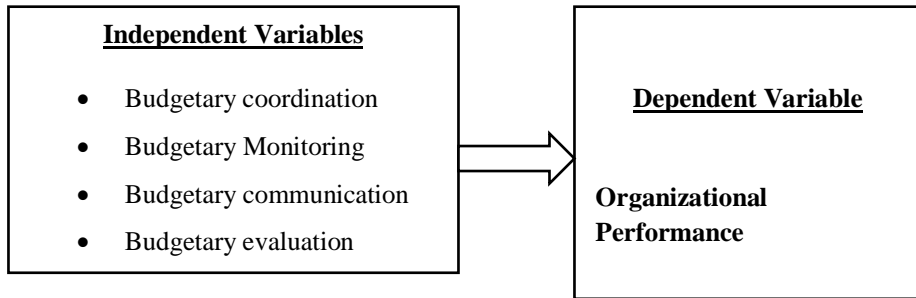


Figure 1: Conceptual Framework

### Hypotheses of the Study

Hypotheses of this study can be formulated as follows,

**H<sub>1</sub>** : Budgetary management process has an impact on organizational performance of the SMEs.

**H<sub>1a</sub>** : Budgetary coordination has an impact on organizational performance of the SMEs.

**H<sub>1b</sub>** : Budgetary monitoring has an impact on organizational performance of the SMEs.

**H<sub>1c</sub>** : Budgetary communication has an impact on organizational performance of the SMEs.

**H<sub>1d</sub>** : Budgetary evaluation has an impact on organizational performance of the SMEs.

### Regression Analysis

The linear regression model was developed by the researcher for the analyses of the study as given below;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y = Performance

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$  are the coefficients of each independent variable.

$X_1$  = Budgetary coordination

$X_2$  = Budgetary monitoring

$X_3$  = Budgetary communication

$X_4$  = Budgetary evaluation

$\varepsilon$  = Error term

**Table 1: Operationalization Table**

<b>Variables</b>	<b>Indicators</b>	<b>Measurement</b>
Budgetary coordination	Activities and functions Follow up on plans Responsibilities	Questionnaire Q.No.07 to Q.No.11
Budgetary monitoring	Supervision Responsibilities Budget Policies	Questionnaire Q.No.12 to Q.No.16
Budgetary communication	Staff contribution Information flow Information sharing	Questionnaire Q.No.17 to Q.No.21
Budgetary evaluation	Operational control Reviewing performance Evaluation reports & regular audit	Questionnaire Q.No.22 to Q.No.26
Organizational Performance	Efficiency of business process Managerial experience Workforce productivity	Questionnaire Q.No.27 to Q.No.30

### 3 RESULTS

Table 2 represents the summary of the reliability tests.

**Table 2: Reliability Analysis**

<b>Variable</b>	<b>Cronbach's Alpha</b>	<b>Number of Items</b>
Budgetary Coordination	0.808	5
Budgetary Monitoring	0.808	5
Budgetary Communication	0.924	5
Budgetary Evaluation	0.922	5
Organizational Performance	0.893	4



According to the results of the reliability test, Budgetary Communication had 0.924 Cronbach alpha value and Budgetary Evaluation had 0.922. These values denote that questions relating to independent variables are in excellent position while the questions relating to Budgetary Coordination ( $\alpha = 0.808$ ) and Budgetary Monitoring ( $\alpha = 0.808$ )

are in good level. Further Cronbach's alpha of questions relating to dependent variable of Organizational Performance also in good level as it has taken the value of 0.893. According to the table 4.7 overall results of reliability test in this research was more than 0.8 and it indicated that all the items are consistent and reliable in this study.

**Table 3: Result of Descriptive Analysis**

Variable	Mean	Standard Deviation
Organizational Performance	3.3917	0.59369
Budgetary Coordination	3.1467	0.47567
Budgetary Monitoring	3.0533	0.50337
Budgetary Communication	2.9300	0.25992
Budgetary Evaluation	3.0400	0.57496

#### Multiple Regression Analysis

Regression analysis is a quantitative method used to test the nature of the relationships between dependent variable and two or more quantitative variables. Through regression analysis researcher further investigated the relationship between dependent variable and independent variables.

The impact of budgetary management process on Organizational performance

The main objective of this study is to identify the impact of the budgetary management process on the organizational performance of SMEs in Hambantota district. The regression analysis was performed by the researcher to identify the impact of the budgetary management process.

**Table 4: Coefficients in Regression Analysis for  
Budgetary Management Process**

Model	Un standardized Coefficients	Standardized Coefficients		t	Sig.
	B	St. Error	Beta		
1(constant)	-.600	.194		-3.093	0.003
BP	1.312	0.63	.939	20.785	0.000

a. Dependent Variable: OP

In this model, when BP = 0, Y = -.600. It indicates that organizational performance is determined by other factors than the budgetary management process.

Coefficient of BP = 1.312 represents that the impact of the budgetary management process on organizational performance, assuming that other factors are constant. When the budgetary management process increases by one unit, organizational performance will increase by 1.312 units, assuming other factors are constant. Therefore, the budgetary management process has a positive impact on organizational performance.

The sub-objectives of this study are to identify the impact of budgetary coordination, budgetary monitoring, budgetary

communication and budgetary evaluation on the organizational performance of SMEs in the Hambantota district. The regression analysis was performed by the researcher to identify the impact of the budgetary management process.

**Table 5: Result of Model Summary in Multiple Regression Analysis**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.945 <sup>a</sup>	.892	.884	.20191

a. Predictors: (Constant), BE, BM, BCom, BC

Model fit can be evaluated by using adjusted R square. In this model the value 0.884 indicates that nearly 88% of the variation explain by four independent variables such as budgetary coordination, budgetary

monitoring, budgetary communication and budgetary evaluation. Rest of the 12% explained by other factors such as budgetary planning, budgetary control, budgetary participation, budget sophistication and budget goal clarity.

**Table 6: Result of ANOVA in Multiple Regression Analysis**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	18.554	4	4.638	113.77	.000 <sup>b</sup>
Residual	2.242	55	.041	2	
Total	20.796	59			

a. Dependent Variable: OP

b. Predictors: (Constant), BE, BM, BCom, BC

Above 6 table mean square value of 18.554 indicates that predictor variables for the test have ability to explain variation of the dependent variable. Therefore, it can be concluded that this regression

model is reasonably fit to the data. Since, F value of 113.772 was significant at 0.000 the assumption that linear relationship between the independent and dependent variables is not violated.

**Table 7: Result of Coefficient in Multiple Regression Analysis**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
1 (Constant)	-1.229	.415		-2.963	.004
BC	.534	.122	.428	4.380	.000
BM	.413	.104	.350	3.989	.000
BCom	.584	.211	.256	2.772	.008
BE	-.010	.151	-.010	-.067	.946

a. Dependent Variable: OP

BC = Budgetary Coordination

BM = Budgetary Monitoring

BCom = Budgetary Communication

BE = Budgetary Evaluation

According to table result of the coefficient table following equation can be developed.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e_i$$

Where;

Y = Organizational Performance

$\beta_0, \beta_1 X_1, \beta_2 X_2, \beta_3 X_3, \beta_4 X_4$  are the coefficients of each independent variable.

$\beta_0$  = Constant

$X_1$  = Budgetary coordination

$X_2$  = Budgetary monitoring

$X_3$  = Budgetary communication

$X_4$  = Budgetary evaluation

e = Error term

$$Y = -1.229 + 0.534X_1 + 0.413X_2 + 0.584X_3 - 0.010X_4$$

In this model, when  $BC = 0$ ,  $BM = 0$ ,  $BCom = 0$ ,  $BE = 0$ ,  $Y = -1.229$ . It indicates that budgetary management process determines by other factors than budgetary coordination, budgetary monitoring, budgetary communication and budgetary evaluation.

Coefficient of  $BC = 0.534$  represents that impact of budgetary coordination on organizational performance assuming that budgetary monitoring, budgetary communication and budgetary evaluation are constant. When budgetary coordination increases by one-unit organizational performance will increase by 0.534 units assuming budgetary monitoring, budgetary communication and budgetary evaluation are constant.

Coefficient of  $BM = 0.413$  represents that impact of budgetary monitoring on organizational performance assuming that, budgetary coordination, budgetary communication and budgetary evaluation are constant. When budgetary monitoring increases by one-unit organizational performance will increase by 0.413 units assuming budgetary coordination, budgetary communication and budgetary evaluation are constant.

Coefficient of  $BCom = 0.584$  represents that impact of budgetary communication on organizational performance assuming that budgetary coordination, budgetary

monitoring and budgetary evaluation are constant. When budgetary communication increases by one-unit organizational performance will increase by 0.584 units assuming budgetary coordination, budgetary monitoring and budgetary evaluation are constant.

Coefficient of  $BE = -0.010$  represents that impact of budgetary evaluation on organizational performance assuming that budgetary coordination, budgetary monitoring and budgetary communication are constant. When budgetary evaluation increases by one-unit organizational performance will decrease by 0.010 units assuming budgetary coordination, budgetary monitoring and budgetary communication are constant.

### Hypotheses Testing

According to the results of regression analysis following discussion is made related to the hypothesis which has been established in the study.

**H<sub>1</sub>** : There is a significant impact of budgetary management process on organizational performance.

According to the regression analysis results, budgetary management process has a positive impact on organizational performance ( $\beta = 1.312$ ) and there is a significant impact of budgetary management process on organizational performance.

Because p value is 0.000 and it is less than 0.05. As a result,  $H_{1a}$  is accepted.

$H_{1a}$  : There is a significant impact of budgetary coordination on organizational performance.

According to the regression analysis results, budgetary coordination has a positive impact on organizational performance ( $\beta = 0.534$ ) and there is a significant impact of budgetary coordination on organizational performance. Because p value is 0.000 and it is less than 0.05. As a result,  $H_{1a}$  is accepted.

$H_{1b}$  : There is a significant impact of budgetary monitoring on organizational performance.

According to the regression analysis results, budgetary monitoring has a positive impact on organizational performance ( $\beta = 0.413$ ) and there is a significant impact of budgetary monitoring on organizational performance. Because p value is 0.000 and it is less than 0.05. As a result,  $H_{1b}$  is accepted.

$H_{1c}$  : There is a significant impact of budgetary communication on organizational performance.

According to the regression analysis results, budgetary communication has a positive impact on organizational performance ( $\beta = 0.584$ ) and there is a significant impact of budgetary communication on organizational performance. Because p value is

0.008 and it is less than 0.05. As a result,  $H_{1c}$  is accepted.

$H_{1d}$  : There is a significant impact of budgetary evaluation on organizational performance.

According to the regression analysis results, budgetary evaluation has a negative impact on organizational performance ( $\beta = -0.010$ ) and there is insignificant impact of budgetary evaluation on organizational performance. Because p value is 0.946 and it is higher than 0.05. As a result,  $H_{1d}$  is rejected.

**Table 8: Hypotheses testing**

Hypotheses	Sig:	Result
<b>H<sub>1</sub></b> : There is a significant impact of budgetary management process on organizational performance.	.000	Accepted
<b>H<sub>1a</sub></b> : There is a significant impact of budgetary coordination on organizational performance.	.000	Accepted
<b>H<sub>1b</sub></b> : There is a significant impact of budgetary monitoring on organizational performance.	.000	Accepted
<b>H<sub>1c</sub></b> : There is a significant impact of budgetary communication on organizational performance.	.008	Accepted
<b>H<sub>1d</sub></b> : There is a significant impact of budgetary evaluation on organizational performance.	.946	Rejected

#### 4. DISCUSSION

The main purpose of the research was to identify the impact of budgetary management process on organizational performance in SMEs of Hambantota district. Researcher used budgetary coordination, budgetary monitoring, budgetary communication and budgetary evaluation as the independent variables and organizational performance as the dependent variable. Initially, the impact of the budgetary management process on organizational performance is tested in the study. Descriptive analysis results indicated that budgetary

coordination has the highest impact and budgetary monitoring is the variable highly affects next while budgetary evaluation is the third. Budgetary communication has the least impact in sample of SMEs.

The study examined the impact of budgetary management process on organizational performance in SMEs. According to Kimungui, Memba & Njeru (2015) the results further indicate a Beta coefficient of 0.419 and a p value of 0.000. Since p value is less than 0.05, the study rejected the null hypothesis and failed to reject the alternate hypothesis. This implies that budgetary process is significant in

explaining financial performance of NGOs in health sector in Kenya. It concludes that budgetary process has a positive influence on financial performance of NGOs in Kenya. According to Silva and Jayamaha (2012), based on R square, 77.4% means the budgetary process strongly effect to the organizational performance in Sri Lankan apparel industry.

Regression result indicated positive and significant relationship between budgetary coordination and organizational performance. According to previous researches, Agbenyo et al. (2018) point out that there is a positive relationship between budgetary coordination and financial performance. A similar result was found by Pimpong and Laryea (2016), budget coordination has a Beta of 0.527 with a significance level of 0.000. Hence it can be concluded that, budget coordination has a statistically significant moderate positive impact on firm performance. And also, this result is similar to findings by Mohammed and Ali (2013). According to Abongo (2017), the study found out that budgetary coordination had a positive and statistically significant effect on the financial performance of top 100 SME firms in Kenya as evidenced by high t- values and p-values of less than 0.05 ( $t=3.066$ ,  $p=0.003$ ). A similar result was found by Silva and Jayamaha (2012), organization performance was influenced by budgetary practice namely budgetary coordination.

In this study, there is a significant impact on budgetary monitoring on organizational performance of SMEs in Hambantota District ( $p=0.000$ ). The researcher found that the majority of SMEs conduct proper budget conferences and meetings, proper budget policies to check the spending and proper additional training to young staff regarding the importance of budget monitoring and more consideration in monitoring budget reports as the reasons for this relationship. Even though most of the previous findings have shown positive significant relationship between budgetary monitoring and organizational performance (Chircir & Simiyu, 2017). According to Agbenyo et al. (2018) budgetary monitoring had p – value (0.0017) which is less than 0.05, therefore it has been shown statistically positive significant impact of budgetary monitoring on financial performance. Based on survey results of Ng'wasa (2017), there was insignificant and positively affects financial performance. Therefore, that result was not accordance with findings of this study. According to Koech (2015) based on coefficient results, budgetary monitoring had 0.032(p value) which is less than 0.05 therefore it was significant impact on financial performance in manufacturing companies.

Further regression result of the study indicated that there is a significant impact of budgetary communication on organizational performance. When considering



the past researches Silva and Jayamaha (2012) investigated that budgetary communication plays an important role in organizations when improving firm performance. According to Abongo (2017), budget communication had a positive and statistically significant effect on performance as evidenced by high t-values ( $t = 3.590$ ) and high p-values ( $p = 0.001$ ) of less than 0.005.

Also, research findings indicated a negative insignificant impact of budgetary evaluation on organizational performance. Because most of the respondents in SMEs of Hambantota district give little effort to prepare evaluation reports. Even though taking corrective actions and upgrading areas is important for an organization and budgetary evaluation helps in advance for that, majority staff of SMEs has no understanding regarding that and it badly affects to maintain a proper budgetary evaluation process. Therefore, that result was not accordance with findings of previous researchers such as Chircir and Simiyu (2017), Kimani (2014). According to Silva and Jayamaha (2012) there was a significant impact of budgetary evaluation on organizational performance in apparel industry. But budgetary evaluation did not much influence the organizational performance in apparel industry. Agbenyo et al. (2018), found the positive significant impact of budgetary evaluation on financial performance, therefore it had p -

value (0.0004) which is less than 0.05. According to Abongo (2017), budget evaluation had a positive and statistically significant effect on financial performance as evidenced by high t-values ( $t = 2.942$ ) and high p-values ( $p = 0.004$ ) of less than 0.005.

## 5. CONCLUSION

The objective of this study is to identify the impact of budgetary management process on organizational performance in SMEs in Hambantota district. It is an explanatory research that was conducted by using primary data. The data was collected by distributing structured questionnaire to the selected sample of 60 SMEs. The data were analyzed through SPSS version 20.0. The researcher used reliability test, descriptive analysis and regression analysis to analyze the collected data. When studying the Sri Lankan context and international context some studies indicated that budgetary coordination, budgetary monitoring, budgetary communication and budgetary evaluation have significant impact on organizational performance.

The research main objective was to identify the impact of budgetary management process on organizational performance in SMEs in Hambantota district. Budgetary management process consists with four variables. According to Regression analysis, the findings of the study revealed

that budgetary coordination, budgetary monitoring and budgetary communication are significantly affect to the organizational performance of SMEs and budgetary evaluation is insignificantly affect to the organizational performance of SMEs. With acceptance of hypotheses, it can be showed that these factors are affect to the organizational performance. According to the descriptive analysis the mean value of budgetary coordination has the highest impact and it represents the 3.1467 while budgetary communication has the least impact which represents the 2.9300. Hence this study fulfills the objective of this research study.

Based on the research findings, the study provides the following recommendations to SMEs in Hambantota district in order to improve the budgetary management process and organizational performance. The findings of this study suggest that organizations in SMEs sector who plan to improve their organizational performance should give more priority to develop the formality of the budgetary coordination, monitoring and communication. Because they have high degree of positive and significant impact on organizational performance.

When applying budgetary management process for an organization, researcher suggests to pay more attention on budgetary

evaluation. Because to face challenges successfully, entire budgetary process should be in good manner. Here the findings indicate that there are poor budgetary evaluating procedures in SMEs in Hambantota district due to lack of knowledge regarding evaluation reports and evaluation process etc. Therefore, following suggestions can be taken to improve the budgetary evaluation process. Mostly SMEs have owners, but in medium sized SMEs, employees more than 50 should set up a budget committee to manage the potential disagreements of managers and they must review the costs of activities. Due to the dynamic environment, there should be necessary adjustments from time to time. Additional training and motivation are needed. Training must be aimed to help them understanding the importance on how to conduct more efficient control in evaluation. From the findings, it is evident that some respondents had school level qualification. Therefore, it is important to start training and educating more young staff for the near future. The evaluation reports must be prepared frequently and must take corrective actions where necessary and upgrade budgeting process of next years. Also doing a regular audit is important in evaluation process. These procedures help for the organizations to face future challenges.

Descriptive results show budgetary coordination has the highest impact level on financial performance. Hence researcher recommends for the SMEs to create policies, rules and regulations in appointing responsible staff with good coordinating skills. Further there are limited resources such as financial resources, human resources and information resources in the businesses. These research findings indicate that management should pay much attention towards budgetary coordination when allocating resources in their decision-making process.

Further this study provides sufficient knowledge to academics by explaining the impact of budgetary management process on organizational performance in SMEs in Hambantota district. By paying much attention to these recommendations SMEs can enhance their financial performance with the development of the well-organized budgetary management process.

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## **Impact of Social Capital Empowerments on the Businesses Success among the Micro and Small-Scale Tourism Entrepreneurs in Sri Lanka**

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### **Abstract**

This paper aims to reveal the impact of social capital which was empowered by Community Based Tourism projects on the business success of micro and small-scale tourism entrepreneurs (MSSTEs) in rural tourism destinations and to determine is there any distinction of the variation created in the business success by the construct of social capital between the MSSTES who were empowered and who were not empowered. Further, determining of which type of social capital either structural or cognitive does affect highly on the business success was focused. Positivism research approach applied and a sample of MSSTEs in rural tourism destinations from two provinces from Sri Lanka was selected. A pre-tested structured questionnaire was used for primary data collection. Three hypotheses were formulated and tested to reveal the impact of social capital on business success. Independent sample T-Test, correlation and multiple regression analysis were applied to test the hypotheses. Findings revealed that social capital affect significantly on creating a variance in business success. Both structural and cognitive social capital affect significantly on the business success while structural capital shows more power to create a variance on business success than cognitive social capital. This implies that tangible social capital attributes such as well-functioning of community associations, strong interpersonal and institutional networks, regular gathering, etc. are perceived as very important for business success. Also, cognitive type social capital such as shared vision, values and norms, trustworthiness, equality in sharing resources and benefits, etc. creates a significant impact on the business growth.

**Keywords:-** Business Success, Cognitive social capital, Community Based Tourism Projects, Micro and Small-Scale Tourism Entrepreneurs, Structural social capital

## 1. INTRODUCTION

In the world context, community involvement in tourism businesses is gradually increasing with the demand shifts happened from “Mass Tourism” which focuses on 3Ss concepts (Sun, Sea and Sand) towards “Niche Tourism” which focuses on nature, culture and people. With this movement, many untouched and under-developed areas have been identified as attractive tourism destinations in many developing and least developed countries. Such under-developed remote villages have full of natural resources, diverse nature in culture, life styles, human skills, talents, etc. Therefore, Community Based Tourism (CBT) has emerged as an alternative type of tourism to utilize such diverse tangible and intangible resources possessed with the rural tourism destinations by taking into account the unique demands of the visitors and provide them with differentiated and diversified tourism products and services. CBT is known as the tourism activities conducted by the local community in a rural area (Anuar & Sood, 2017) and involves community participation and aims to generate benefits for local communities in the developing world by allowing tourists to visit these communities to receive an exciting experience and learn. Due to its nature, the developing and least developed countries (LDCs) emphasized that the CBT as a poverty reduction,

sustainability improvement and community development tool that strengthens the ability of rural communities to manage tourism resources while ensuring the local community’s participation towards initiating and sustaining the tourism business activities (Dangi & Jamel, 2016; UNWTO, 2017).

The closer look at the definitions of CBT shows that, it was built by incorporating the elements of social capital such as community participation, cooperation, sharing the resources and benefits and, subsequently, these were considered as the principals of CBT. Therefore, Capitals Approach to Sustainability in CBT discussed social capital as one of the three forms of capitals and other two were natural capital and human capital (Lehtonen, 2004). Hence, CBT empowerment projects which were initiated in many countries have emphasized to backup and strengthen the community in terms of human capital and social capital and assist them to harness the opportunities from proper utilization of natural capital while protecting those for the future uses. CBT usually focuses on niche markets by offering the tourism products and services in the range of eco-tourism, agri-tourism, adventure tourism, cultural and heritage tourism and specifically draws the attention on offering the local products and services to customers while spreading the economic benefit among the community (ASEAN

Community Based Tourism Standard, 2016). Hence, one of the goals of the CBT projects is to empower the tourism community to act towards a collective goal (Rodriguez-Giron & Vanneste, 2019). The role of social capital is must in sharing the human capital have with the community people as well as the natural capital available in the destination. The community empowerment approach is doing an intervening role for building and maintaining social capital and improving collective well-being among the community people in the tourism destinations with the purpose of helping them to achieve success and sustainability in tourism businesses.

However, in many of the rural destinations, in the historical era, cohesiveness, cooperativeness and mutual sharing were the characteristics in their day-to-day life. For example, as shown by Alawattage et al. (2016), prior to the advent of microfinancing projects for poverty eradication in rural areas of Sri Lanka, the village women have traditionally gathered as small kinship groups to work together informally and to pool their cash, called 'Auction ciettu' system. This system was successfully operated as small micro-borrowing groups around blood relationships and close personal friendships. These traditional systems were eroded by such development projects like formal microfinance projects which were promoted as tools for

rural level poverty alleviation. On the other hand, with the commercialization due to opening up the livelihood opportunities in the tourism sector, presently, several community people work alone to maximize the benefits for their own while others work collaboratively under the facilitation arm of CBT projects or any other development initiatives to harness the vast opportunities rather they could reach by working alone. Also, past researchers viewed upon (for example, Rodriguez-Giron & Vanneste, 2019; Putnam, 1995), directing the community for a common goal and collective action and also for sharing resources seem difficult because of such diverse interests, self-reliant nature, and competitive behaviour of the community people. Hence, the role of third party which works as development initiatives, for instance, CBT projects, cluster or value chain developers or aid agencies, etc. require to be taken the leading role of initiating to develop social capital among the community and guiding them for better results. However, as elaborated above, all the MSSTEs who operate in rural tourism destinations do not create such community clusters, networks or associations and they practice unaccompanied behaviour. Therefore, a dilemma is there about whether this rural community either who were empowered or not empowered has the capacity to act together to shape a common future and self-



determine its own development path (Rodriguez-Giron & Vanneste, 2019). Therefore firstly, this paper endeavor to reveal the impact of social capital geared by the CBT projects among the community people on the success of micro and small-scale tourism entrepreneurs (MSSTEs) in rural tourism destinations and next to determine is there any distinction of the variation created in the business success by the construct of social capital between the MSSTES who were empowered and who were not empowered. Moreover, several categories of social capital such as structural social capital, relational social capital and cognitive social capital were discussed in the past literature. Moreover, a debate is still continuing regarding which type of social capital does affect highly on the business success of the tourism businesses (Minamoto, 2010; Pramanik et al., 2019; Zhang et al., 2020) and the third objective of this study was focused on this predicament.

## **2. LITERATUR REVIEW**

Past research has identified social capital as an integral part of the community-based tourism because the active participation of social actors in the destination is must for the success and sustainability of CBT. Social capital concept was first introduced by Bourdieu in 1983 and Coleman incorporated further views on social capital concept in 1988. Coleman argued that

social capital consisted of mutual trust, authority relations, information potential, effective norms, and appropriate social organizations. In 2000, Putnam, further contributed to the Coleman's views on social capital concept (Pramanik et al., 2019). Putnam (1995) defined social capital as the capacity of people to act together towards common goals. Social capital is defined by the OECD (2001, p. 103) as "networks together with shared norms, values and understandings that facilitate co-operation within or among groups". Social capital is most frequently defined in terms of the groups, networks, norms, and trust that people have available to them for productive purposes.

The dimensions of social capital revealed in the past literature are also vary from study to study. In 1988, Coleman argued that social capital consisted of mutual trust, authority relations, information potential, effective norms, and appropriate social organizations. Putnam (1995) presented trust, networking, and norms of reciprocity as the dimensions. Pramanik et al. (2019) used two dimensions of social capital including 'role of trust' and 'collective action'. Zhang et al (2020) presented six dimensions including: collective efficacy, community belongingness, traditional social regulations, community cohesion, social network, and community competency. So, social capital is considered as multi-dimensional

in nature specifically regarding CBT and cluster approaches of Micro, Small and Medium Scale Enterprises (Claridge, 2018; Andrews, 2010; Grootaert et al., 2003). These multi-dimensions of social capital in community development research context have been categorized into three meaningful groups as structural, relational and cognitive social capital (Nahapiet & Ghoshal, 1998). Andrews (2010) defined structural social capital as the presence of a network of access to people and resources, relational social capital as the feelings of trust that are shared by the many actors within the social context such as group, organization, and community, and cognitive social capital as the subjective interpretations of shared understandings. However, their argument was that social capital have mostly focused on structural and relational social capital and very limited on cognitive social capital. Claridge (2018) also presented a similar definitions and structural social capital was considered as connections among actors, relational social capital as trust between actors, and cognitive social capital as shared goals and values among actors. A little bit similar view was presented by Rodriguez-Giron & Vanneste (2019, p.33) and identified three key dimensions in social capital as networks (structural input), norms and trust (cognitive input/output), and collective actions (results output) and these three were considered as the

building blocks of social capital relating to CBT. Only two categories of social capital: structural and cognitive social capital were considered by Grootaert et al. (2003). Types of groups and networks that poor people can call upon, the nature and extent of their contributions to other members of those groups and networks were discussed as structural social capital and the respondents' subjective perceptions of the trustworthiness of other people and key institutions that shape their lives as well as the norms of cooperation and reciprocity that surround attempts to work together to solve problems were discussed under the category of cognitive social capital. Further, this study explored 6 sub dimensions under these two categories of social capital including Groups and Networks, Trust and Solidarity, Collective Action and Cooperation, Information and Communication, Social Cohesion and Inclusion, and Empowerment and Political Action (Grootaert et al., 2003, P.5). The Social Capital Assessment Tool (SOCAT) that was developed by the World Bank also utilized three dimensions of social capital including structural social capital, cognitive social capital, and collective action. Number of social organizations and networks, member characteristics, intra-organizational decision-making functions and leadership, relationships with other

organizations, etc. were the sub indicators of measuring the structural social capital. “Solidarity”, “trust and cooperation”, and “conflict resolution methods” were the indicators of measuring cognitive social capital and type of collective action, the outcome of such activity, and people’s motivation to participate were used as indicators to measure the “collective action” by the SOCAT. By doing a research on post-tsunami recovery among community clusters, Minamoto (2010 P.550) expressed that structural social capital is tangible and easily understood and it represents regional organizations, interpersonal networks, community-based organizations, and the like. On the other hand, cognitive social capital includes trust, norms, and values and all of those are born of people’s interactions with each other. The review of past literature on social capital dimensions relating to community-based tourism revealed that majority of researchers emphasized on structural and cognitive social capital and few studies have focused on the relations social capital or collective action. Also, several studies incorporated the relational and cognitive social capital and therefore, less emphasis was there on relational social capital.

Past literature has discussed both positive and negative effects of the impact of social capital on

community-based tourism. Social capital enables to create a solidarity or cohesion among community members which reinforce social support and social networks among local residents and families and thereby building successful tourism businesses (Zhang et al., 2020; Rodriguez-Giron & Vanneste, 2019; Nunkoo, 2017), create a sense of identity and common purpose among community members and reduces social inequality between communities (Nunkoo, 2017), improve residents’ interests in community issues and increases responsibility and accountability among the community (Zhang et al., 2020; Pramanik et al., 2019), assist in improving human capital of the community such as community competency and knowledge, problem-solving ability of local residents that arise through such collective efforts and ultimately this affects to have with the community a knowledge to practice sustainability by covering environmental, economic and social aspects (Zhang et al., 2020; Pramanik et al., 2019), build community culture and important values (Zhang et al., 2020), reinforce relationships and interactions among people in the community (Zhang et al., 2020; Rodriguez-Giron & Vanneste, 2019; Minamoto, 2010; Moscardo, 2013). Further, social capital facilitates for knowledge sharing and innovation (Kim & Shim, 2018; Martínez-Pérez et al., 2016), stimulates open and

efficient exchange of information and resources among the businesses and community people (Inkpen and Tsang, 2005). Shanmuganathan et al. (2020) pointed out the findings of Thammajinda (2013) and Hwang (2012) says that social capital opens the opportunity for funds, advisory services, technical support and skill development for the local people at the grass-root level and this affects to enhance peoples' involvement in the tourism industry. Lin et al. (2017) found that in Sri Lankan context, though both rural and urban residents believe about future tourism development, among the urban community impact of social capital is insignificant in future tourism development. By citing the findings of several researchers (Blackman & Henderson, 2004; De Smedt et al., 2013; Slaughter, 2002; Wilkinson et al., 2014) who did a survey of empowered farmer communities in rural settings, Bourgeois et al. (2017) highlighted that foresight initiative supporting was provided as part of an empowerment for the community to work as change agents in the society by working collaboratively for shaping and developing their future.

Also, several researchers found that bad relationships create negative results among the community such as lack of infrastructure development, lack of competent and trained people in the community, poor

marketing and destination promotion, absence of equitable sharing of resources, etc. (Pramanik et al., 2019; Payne et al., 2011). However, it is not having a concluding view of whether such positive effects or bad effects foreseen relating to either with empowered or not empowered MSSTEs. In Sri Lankan context, few researches (for example, Minamoto, 2010; Shanmuganathan et al., 2020; etc.) are available which were focused on social capital aspect of community tourism. However, any evidences on such a comparative analysis between the MSSTEs who were empowered and who were not empowered by any CBT project as well as which dimensions of social capital affect significantly on business growth cannot be found. Therefore, within that milieu, with the aim of fulfilling knowledge and contextual gaps in the existing research literature, the following three research hypotheses were formulated to test in this study.

H<sub>1</sub>: There is a significant difference in the impact of social capital on the business success between the MSSTEs who were empowered by a CBT project and the MSSTEs who were not empowered by any CBT project.

H<sub>2</sub>: Structural social capital affect significantly on the business success of the MSSTEs who were empowered by a CBT project.

H<sub>3</sub>: Cognitive social capital affect significantly on the business

success of the MSSTEs who were empowered by a CBT project.

### 3. METHODS

Positivism approach was applied in this study because it aims to reveal the impact of social capital on the business success of the micro and small-scale tourism entrepreneurs in Sri Lankan context by recognizing the individual's and group constituents of a phenomenon of business success owing to empowerment and then simplifying the phenomenon in terms of different constructs, and relationships between these constructs. The study constructs included "social capital" as the independent variable and "business success" as the dependent variable. Social capital characteristics that have been empowered by CBT projects among the community tourism entrepreneurs or have with inheritably with the community were identified in this study under two sub categories as 'structural social capital' and 'cognitive social capital' by taking into account the categorization used by the majority of the past researchers (for example: Minamoto, 2010; Andrews, 2010; etc.). The definition presented by Andrews (2010) was used in this study for defining the two dimensions of social capital. The structural social capital is defined as the presence of a network of access to people and resources. Four statements as per 5-point Likert

scaled (5 = Strongly agree to 0 = Strongly Disagree) were used in measuring the degree of structural social capital (SSC) possessed with the community people of the research sample. Those include: i). Well-functioning the established CBOs in the village (SSC<sub>1</sub>); ii). Possessing strong networks to get the assistance and required services from the outside (SSC<sub>2</sub>); iii). Having a greater contribution to other members of the group (SSC<sub>3</sub>); and iv). Regular gatherings as a group stimulate problem solving and mutual assistance (SSC<sub>4</sub>). Cognitive social capital is defined as the capability for resource exchange and it covers shared goals, norms and values among actors as well as trust, solidarity and reciprocity. 5-point Likert scaled five statements were used in measuring the degree of cognitive social capital (CSC) possessed with the community people. Those include: i). Having common vision, mission, and goals direct the community work collaboratively (CSC<sub>1</sub>); ii). Values and norms of the society facilitate work together and solve problems (CSC<sub>2</sub>); iii). Equality in sharing resources and benefits stimulate uplifting the tourism in the village (CSC<sub>3</sub>); iv). Trustworthiness of the village leadership and other people shape their lives for better living (CSC<sub>4</sub>); and v). Uniformity in service standards, pricing and branding the tourism products among the community enhance more tourist attraction (CSC<sub>5</sub>).

Pre-tested structured questionnaire was used to reveal the respondents' perception on the impact of social capital on tourism business success. As considered by the past researchers (Gunarathne, 2008; Freel & Robson, 2004; Storey et al., 1987), the business success was considered as a summated measure by incorporating three criteria including number of visitors, number of employees and capital investment and aggregated average increase relating to three-year period from 2017 to 2019 was taken into account. The formula for calculating business success was adopted from the measure of business growth which was used by the countries of Organization for Economic Co-operation and Development (OECD, 2000, P. 16).

A sample of 225 micro and small-scale tourism entrepreneurs (MSSTEs) were selected by using the stratified simple random sampling technique from the population of villagers who run the business in rural tourism destinations in Southern and Eastern Provinces of Sri Lanka which were registered under the Sri Lanka Tourism Development Authority or Local Divisional Secretariate. Two strata were identified as the MSSTEs who were empowered by a CBT project and who were not empowered by any CBT project. Accordingly, MSSTEs from Panama and Arugam Bay villages in Ampara district who were

empowered by the CBT project of International Labour Organization (ILO) and MSSTEs from Kanneliya, Vihrahena, Mederipitiya and Godahena villages in Galle and Matara districts who were empowered by the CBT project of Ruhunu Tourism Bureau (RTB) were identified as one stratum. Both these CBT projects operate under the Sri Lanka Tourism Development Authority. The other stratum included MSSTEs from the villages of Okanda, Panama, Hikkaduwa, Koggala, Mirissa, Dondra, and Kalametiya in both Southern and Eastern provinces of Sri Lanka who were not empowered by any CBT project. Because of non-responding and missing data, 25 questionnaires were rejected and 200 questionnaires were proceeded for analysis purpose. Out of these, 130 were the empowered MSSTEs and the remaining 70 were non-empowered MSSTEs. The response rate was about 89 percent. Cronbach alpha test was used to determine the internal consistency of the measurements used in the study and the reliability of the multiple Likert Scale questions in the questionnaire. Independent sample T-Test, correlation and regression analysis were applied for data analysis and hypotheses testing. As pointed out by Hair et al., (2014, p. 11) with a moderate effect size power reaches acceptable levels at sample sizes of 100 or more for alpha levels of both .05 and .01. Because the

sample size of this study is more than 100, alpha levels of both .05 and .01 have been selected in testing hypotheses.

#### 4. RESULTS

As per the basic profile of the sample, 60 % of the MSSTEs was male and 40% was female, 79% was married ones. Majority (95%) was in the age group of 30-50 years and 62% has received at least senior secondary level education and 21% has tertiary level education. The most popular tourism activities among the community people in the selected villages are: operate homestays, restaurants, souvenir

shops and retail shops; conduct cookery classes; arrange safari tours (Wildlife, village life, heritage and boat tours), adventure activities (land and water based) surfing and surfing training, beach party and cultural entertainments, and tour guiding. As shown in Table 1, Cronbach's alpha values for the two dimensions of social capital reported as greater than 0.7. As per the rule of thumb of internal consistency described by Hair et al (2014) and Zikmund (2013), this assures the internal consistency and the scales deemed reliable for further analyses.

**Table 1: Results of Reliability Test**

SC Dimensions	Indicators	Cronbach's alpha
Structural SC	SSC <sub>1</sub> , SSC <sub>2</sub> , SSC <sub>3</sub> , SSC <sub>4</sub>	0.796
Cognitive SC	CSC <sub>1</sub> , CSC <sub>2</sub> , CSC <sub>3</sub> , CSC <sub>4</sub> , CSC <sub>5</sub>	0.812

Source: Survey- 2019/2020

The first hypothesis of this study (H<sub>1</sub>) assumed that “There is a significant difference in the impact of social capital on the business success between the MSSTEs who were empowered by a CBT project and the MSSTEs who were not empowered by any CBT project. The impact of social capital on business success was revealed through T-Test results depicted in

Table 2 and Table 3. As shown in Table 2, consequently the mean value relating to the empowered MSSTEs and the non-empowered MSSTEs was reported as 71.37 and 47.86. This implies that MSSTEs who received the empowerment assistance, on average, possess higher level of social capital attributes than those who have not received any empowerment.

**Table 2: Descriptive Statistics relating to the MSSTEs**

	Empowered/Not	N	Mean	SD
Degree of SC	No	70	47.86	1.00
	Yes	130	71.37	1.67

Source: Survey- 2019/2020

As per the T-Test results shown in Table 3, *P*-value (0.002) was less than .05 and the two variances are significantly different. By looking down the ***Equal variances not assumed*** column it can be seen that the group means are significantly different as the value in the "Sig.

(2-tailed)" row is less than 0.05. This implies that there is a significant difference in impact of social capital on the business success between the MSSTEs who were empowered and not empowered by a CBT project. Hence, the first hypothesis ( $H_1$ ) of this study can be accepted.

**Table 3: T-Test Results for Social Capital and Business Success**

		Social Capital Attributes	
		Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F	10.183	
	Sig.	.002	
	<i>t</i>	-8.159	-8.393
	<i>df</i>	128	120.65
	Sig. (2-tailed)	.000	.000
	Mean Difference		
	Std. Error Difference	.000	.000
	95% Confidence Interval		
	Lower of the Difference	-23.508	-23.508
	Upper	2.36033	2.7036
		-24.64172	-24.46634
		-15.29356	-15.47141

Source: Author survey – 2019/20



Third objective as well as second and third hypotheses were focused on determining which type of social capital either structural or cognitive does affect highly on the business success of the tourism businesses. The second hypothesis of this study (H<sub>2</sub>) was “Structural social capital affect significantly on the business success of the MSSTEs who were empowered by a CBT project” and third hypothesis (H<sub>3</sub>) was “Cognitive social capital affect significantly on the business success of the MSSTEs who were empowered by a CBT project”. MSSTEs in the sample who were empowered by a CBT project were only utilized for testing these hypotheses. As per correlation statistics depicted in Table 4, both structural social capital and cognitive social

capital have high level of positive correlations respectively 0.717 and 0.693 with the business success. This implies that both CBT projects (ILO and RTB) assisted in improving both dimensions of social capital among the selected MSSTEs and the social capital attributes show a high level of positive correlation with the business success. Table 5 depicts the overall model summary of the multiple regression analysis on the two dimensions of social capital of MSSTEs with business success. R square value of 0.606 indicates that 60.6% of variance in business success of MSSTEs who were empowered by a CBT project was significantly explained by the structural and cognitive social capital.

**Table 4: Correlation statistics of Social capital and Business success**

		Business Success	Structural Social Capital	Cognitive social capital
Pearson Correlation	Business Success	1.000	.717	.693
	Structural Social Capital	.717	1.000	.677
	Cognitive social capital	.693	.677	1.000

Source: Author survey – 2019/20

**Table 5: Model Summary**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
Degree of Social capital of the MSSTES	.779 <sup>a</sup>	.606	.589	12.48417

a. Predictors: (Constant), SSC, CSC

Further, multiple regression coefficients which depict in Table 6 show that the two selected dimensions of social capital affect significantly on the business success of the community who were empowered by the two CBT projects in the selected villages. As per the Beta value under Standardized Coefficients column, the highest number in the beta is 0.489 relating to structural social capital. Cognitive social capital shows the second highest impact by reporting the beta value of 0.390. The *P values* show that

the impact of both of the social capital dimensions of MSSTES on business success was significant at the 0.01 level and therefore, the hypothesis two and three can be accepted. This implies that the empowerment efforts of the CBT projects for enhancing either structural type social capital or cognitive type social capital are the good predictors of business success of the rural community people in tourism attraction areas because both of these create 60.6% variation in business growth.

**Table 6: Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Structural Social Capital	.577	.091	.489	6.320	.000
Cognitive Social Capital	.471	.092	.390	5.143	.000

a. Dependent Variable: Business success

## 5. DISCUSSION

As emphasized by many past researchers (for example: Zhang et al., 2020; Rodriguez-Giron & Vanneste, 2019; Pramanik et al., 2019), this study also revealed that social capital empowered by the CBT projects affect to enhance the business success of community tourism entrepreneurs. As found in this study, past researchers (Zhang et al., 2020; Rodriguez-Giron & Vanneste, 2019; Minamoto, 2010; Moscardo, 2008) also identified social capital as an integral part of the community-based tourism because the active participation of social actors in the destination is must for the success and sustainability of CBT. Precisely in this study, the structural type social capital affect highly on the business success than the cognitive type of social capital. Past researchers, for example, Rodriguez-Giron & Vanneste (2019) and Putnam (1995), explained that because of diverse interests, self-reliant nature, and competitive behaviour of the community people it is difficult to direct the community for a common goal, collective action, and towards sharing resources. The respondents in the sample, believed that regular gathering to discuss and solve the problems, strong intra-networks, inter-networks and external networks to get the assistance and required services are essential for achieving higher level of business success. A similar view was

presented by several researchers including: Zhang et al., (2020); Pramanik et al., (2019); Zhang et al., (2020); Pramanik et al., (2019); and Nunkoo, (2017). In line with the finding of Grootaert et al. (2003), it was founded that trust, solidarity and reciprocity affect for continuation of the CBOs in the selected tourism villages and shared norms and values among actors ensure the sustain in the business. As founded by Zhang et al. (2020) and Pramanik et al. (2019), this study also revealed that the norm of equality and sharing benefits were believed as very essential to active participation for community development and tourism business success. Specifically, the contribution made by the members of the CBT societies for the community tourism development fund and equitably sharing the benefits show the trustworthiness and commitment of the community. This further proved by comparing the impact of social capital on business growth between the micro and small-scale tourism entrepreneurs who were empowered and who were not empowered by a CBT project and findings revealed that significant difference exists in impact of social capital on business success between the empowered and non-empowered MSSTEs.

## 6. SIGNIFICANCE OF THE STUDY

Findings of this study contributed to determine the significant role

of the CBT projects on empowering the social capital attributes further among the community people who involved in diverse tourism business activities in rural tourism destinations. Though the inherited nature and traditional way of living of the rural people demonstrate several social capital attributes, the paradigm shift from such traditions and values due to increasing the competition and more value for the uniqueness of their products and services cause to raise the requirement of the third-party intervention to streamline and strengthen the collective behaviour to reach the success. This was proved as per the findings of demarcation exist in the business success between the MSSTEs who were empowered and not empowered by a CBT project. Further, the findings are supportive for determining the role of extension of the CBT projects in terms of enhancing the social capital among the community tourism entrepreneurs. Both structural and cognitive social capital affect significantly on the business success while structural capital shows more power to create a variance on business success than cognitive social capital. This implies that tangible social capital attributes such as well-functioning of community associations, strong interpersonal and institutional networks, regular gathering, etc. are perceived as very important for business success. Providing

objective assessment about what we have relating to social capital such as network of access to people and resources need to be promoted by the CBT projects rather the subjective assessments such as establishing shared goals, norms and values among actors as well as trust, solidarity and reciprocity. Main limitation of this study was selecting only two CBT projects which were operated in the selected few villages from Ampara, Marara and Galle districts of Sri Lanka. Future researchers could extend the focus on social capital and business growth by extending such research into other tourism destinations in Sri Lanka which were empowered by other CBT projects.

## **7. CONCLUSION**

Community Based Tourism as an alternative approach to Mass tourism, is known as the tourism activities conducted by the local community. Therefore, social capital possessed with the community is considered as essential for the proper implementation of this participatory development approach. Though the rural society people had with several inherited social capital attributes like mutual support, sharing resources, working for a common goal, etc., the self-reliant nature and competitive behaviour of the community people seem to play as more prominent among the rural community in present context. Hence, the involvement

of third party for promoting and continuing the social capital attributes among the rural tourism community has been identified as essential to the business growth of MSSTEs. One of the research objectives and a hypothesis of this study focused on revealing this and findings discovered that a significant variation of the business success was created by the social capital. The results relating to the comparison of the impact of social capital on the business success between the MSSTEs who were empowered and who were not empowered by any CBT project/s revealed that a greater difference exists between the empowered and unempowered MSSTEs. Therefore, it can be concluded that empowerment efforts for promoting social capital attributes among the MSSTEs will assist them to reach higher level of business growth. Further, this study was focused on determining which type of social capital dimension either structural capital or cognitive social capital affect highly on the business success of the MSSTEs. As per the findings, it can be concluded that structural type social capital including strong networks, proper functioning of community societies and associations, etc., affect significantly on the business success rather than the cognitive type social capital which emphasized subjective feelings like trust, norms, reciprocity, etc. However, both types of social capital affect significantly on the business

success of the MSSTES in the sample and a highly valuable role is doing by both the CBT projects towards ensuring the success of the community tourism businesses by strengthening the social capital attributes among the tourism entrepreneurs in the rural tourism destinations.

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## **The Impact of Economic Growth, Foreign Direct Investment, Urbanization and Trade Openness on CO<sub>2</sub> Emissions in Sri Lanka**

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### **Abstract**

Climate change in Sri Lanka is a big issue in recent years and CO<sub>2</sub> emission is continuously rising in Sri Lanka. The main objective of the study is to examine the impact of economic growth, foreign direct investment, urbanization and trade openness on CO<sub>2</sub> emissions in Sri Lanka during the period 1978-2019. To accomplish the objective, applied Autoregressive Distributed Lag (ARDL) model to determine the long-run and short-run effects. CO<sub>2</sub> emission is used as the dependent variable. Foreign direct investment, per capita GDP, trade openness and urbanization variables, which act as the independent variables in the model. The results indicate that GDP per capita, urbanization and trade openness could lead to increased environmental emissions in the long-run. However, GDP per capita could lead to decreased environmental emissions in the short-run. In order to prevent the increase of CO<sub>2</sub> emissions caused by economic growth, urbanization and trade openness, the level of CO<sub>2</sub> emissions should be considered when making policies to improve economic growth, and urbanization. Moreover, the government should design the trade reforms and policies to be accompanied by strong environmental policies in the long-run.

**Key words:-** Economic Growth, Foreign Direct Investment, Urbanization, Trade Openness, CO<sub>2</sub> Emission.

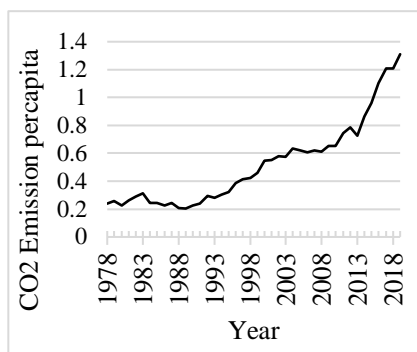
## 1. INTRODUCTION

CO<sub>2</sub> emission is one of the main factors of human induced climate change and increase global warming. The level of CO<sub>2</sub> in the earth has been on the increase since the industrial revolution (Ayoade, 2003). We should attempt to cut down on our personal CO<sub>2</sub> emission because climate change in Sri Lanka is a big issue in recent years. According to the Global Climate Risk Index 2019, Sri Lanka has been ranked the second most affected country by extreme weather events in the past 20 years (Eckstein et al., 2019, p. 6).

According to the definition of the World Development Indicator (2020), “Carbon dioxide emissions are those stemming from the burning of fossil fuels and the manufacture of cement and it includes carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring”. Figure 1 represents the per capita CO<sub>2</sub> emissions in Sri Lanka has been showing an increasing trend since 1990s. The value for CO<sub>2</sub> emissions (metric tons per capita) in Sri Lanka was 1.31 as of 2019. According to the World Development Indicator Database (2020), over the past 41 years, this indicator reached a maximum value of 1.31 in 2019 and a minimum value of 0.2036 in 1989.

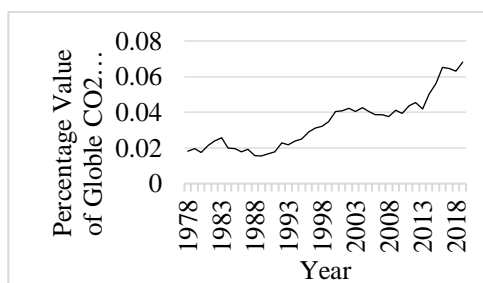
Figure 2 represents the annual share of global CO<sub>2</sub> emission,

which is measured as each country's emissions divided by the sum of all countries' emissions in a given year plus international aviation and shipping (known as 'bunkers') and 'statistical differences 'in carbon accounts. Sri Lanka produces less than 0.1 percent of the world's carbon dioxide emissions. However, the level of CO<sub>2</sub> emission in the country is continuously rising in Sri Lanka in recent years.



**Figure 1: Carbon Dioxide Emissions Per Capita in Sri Lanka (1978-2019).**

Source: World Bank, World Development Indicator in Sri Lanka. (2020).



**Figure 2: Annual Share of Global CO<sub>2</sub> Emission in Sri Lanka.**

Source:

<https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>

The majority of studies have analyzed economic growth and energy consumption as the two most important variables related to environmental degradation (Osobajo et al., 2020; Mizra and Kanwal, 2017; Kasman and Dunman, 2015; Dritsaki and Dritsaki, 2014 etc.). However, economic growth and energy consumption alone may not be enough to explain CO<sub>2</sub> emission (Ozturk et al., 2010). Therefore, it is very important to consider other macroeconomic variables such as foreign direct investment, urbanization and trade openness on CO<sub>2</sub> emission.

“Foreign direct investment (FDI) inflows play a strong impetus for economic development and growth and it is considered as one of the major drivers of globalization” (Rathnayaka Mudiyansele et al., 2021). The foreign direct investment is very important for both developed and developing countries and believe that FDI can positively affect their economies. According to the World Development Indicator in Sri Lanka (2020), the net inflows of FDI in Sri Lanka increased from 1.47 million US dollars in 1978 to 758 million US dollars in 2019. Data on FDI inflows have increased steadily from 2015 to 2018. However, it decreased in 2019 in line with the changing global economic situation and the political environment. Theoretically, the effect of FDI on the CO<sub>2</sub> could have two possible effects. The effect could be negative, in the sense that

increased FDI inflows could lead to increased environmental emissions and increased FDI inflows could lead to decreased environmental emissions (Demena and Afesorgbor, 2020; Seker et al., 2015; Kim, 2020).

(“Kuznets curve”, 2021), there exists a U-shaped relationship between the level of CO<sub>2</sub> emissions and economic growth, according to the Environmental Kuznets Curve (EKC) hypothesis, which was introduced by Kuznets (1950s and 1960s). The EKC hypothesis indicates that growing per capita GDP leads to increasing CO<sub>2</sub> emissions and when reaching a high enough per capita GDP at the certain turning point, CO<sub>2</sub> emission starts to decrease. The effect of economic growth on the CO<sub>2</sub> could have two possible effects. The effect could be negative, in the sense that increased GDP per capita could lead to increased environmental emissions and increased GDP per capita could lead to decreased environmental emissions. The higher level of income increases demands for more energy or promotes industries, which effect environment pollution. On the other hand, environmental quality may improve if higher income leads to adoption of environmentally friendly production techniques and consumption of clean and green energy (Aye and Edoja, 2017).

Urbanization is a one of major change taking place in worldwide. There is a significant difference in

urban population change between the more developed countries and the less developed countries. Many studies have indicated that urbanization as the one of important variable related to environmental degradation (Gasimli et al., 2019; Sharma, 2011; Cole and Neumayer, 2004 and Shahbaz et al., 2014). According to the theories of ecological modernization, urbanization can have positive as well as negative impact on the environment (Sadorsky, 2014). An increase in urban population causes a high level of CO<sub>2</sub> emission. On the other hand, it does not increase CO<sub>2</sub> emission. The impact of urbanization on the environment differs with the level of development (Poumanyvong and Kaneko, 2010). Considering the trend of urban population growth in Sri Lanka, the data reveal that Sri Lanka has a slow tempo of urbanization. There was an increase in urban population growth, reaching the 18.585 percent in 2019 (World Development Indicator, 2020).

The relationship of trade openness and CO<sub>2</sub> emission has been examined in many studies. Several studies have found the mixed results. Some researchers argue that trade openness is harmful for environmental quality; while some researchers found trade openness is good for environmental quality. Some others have found even no relationship between trade openness and CO<sub>2</sub> emission. Trade openness towards greenhouse gas emission is considered as an

important issue within the context of human induced climate change (Naranpanawa, 2011). Trade openness could increase production and income; it affects the emissions (Fotros and Maaboudi, 2011). However, the virtue of trade theories indicated that, there are no clear relationships between environmental quality and trade openness (Fotros and Maaboudi, 2011 as cited in Copeland and Taylor, 2005).

There are some studies that are conducted in Sri Lanka to examine the impact of trade, and urbanization on environmental degradation (Gasimli et al., 2019), the impact of liberalization on CO<sub>2</sub> emission (Kariyawasam and Sumanaratne, 2020), the relationship between trade openness and carbon emissions (Narampanawa, 2011). There is not study that examines the impact of economic growth, foreign direct investment, urbanization and trade openness on CO<sub>2</sub> emission together in Sri Lanka uses recent data and sophisticated econometric technique. Thus, this study tries to bridge this gap. Considering the trend of CO<sub>2</sub> emission, foreign direct investment, economic growth, urban population growth, and trade openness in Sri Lanka, it is very important to examine the impact of these factors on CO<sub>2</sub> emission in Sri Lanka. In the study, seek to answer the following question; namely, are there any impact on economic growth, foreign direct investment,

urbanization and trade openness on CO<sub>2</sub> emission in Sri Lanka during the period 1978-2019?

The objective of this study is to examine the impact of economic growth, foreign direct investment, urbanization and trade openness on CO<sub>2</sub> emission in Sri Lanka. The main hypotheses are developed as follows;

H<sub>A</sub> = Economic Growth has an impact on CO<sub>2</sub> emission

H<sub>B</sub> = Foreign direct investment has an impact on CO<sub>2</sub> emission

H<sub>C</sub> = Urbanization has an impact on CO<sub>2</sub> emission

H<sub>D</sub> = Trade openness has an impact on CO<sub>2</sub> emission

The paper is organized as follows: In the first part, introduction, research questions and objectives of the study. In the second part, a review of the literature field gives empirical evidence of earlier studies. Next, the research methodology is used data and sources, model specification and estimation techniques are covered. Further describes the results of the study and some concluding remarks are made in final section.

## 2. LITERATURE REVIEW

### 2.1 Country Specific Analysis

Gasimli et al., (2019) examined the nexus between energy, trade, urbanization and environmental degradation in Sri Lanka from 1978 to 2014 using ARDL bound testing method. In this study, carbon emission (metric tons) per capita is used as a proxy for environmental degradation, energy

consumption is proxied by energy consumption per capita (kg of oil equivalent per capita), income level is proxied by real GDP per capita and trade openness is measured as the ratio of the exports plus imports to GDP. The urban population is used as a proxy for urbanization. The long-run results indicated that there is a U-shaped relationship existing between CO<sub>2</sub> emission and income in the long-run. Trade openness, energy consumption positively contributed to carbon emissions. Urbanization in Sri Lanka is very interesting, as urbanization was significant with a negative sign implying that urbanization does not aggravate environmental degradation throughout the years.

Narampanawa (2011) has examined the relationship between trade openness and carbon emissions in the case of Sri Lanka using Autoregressive Distributed Lag (ARDL) bounds testing approach and the Johansen-Juselius maximum likelihood approach over the period 1960 to 2006. The results suggested neither a long run equilibrium relationship, nor a long term causality exists between trade openness and carbon emissions in Sri Lanka. However, the results indicated that there is a short run relationship between trade openness and carbon emissions.

Kariyawasam and Sumanaratne (2020) have examined the impact

of liberalization on CO<sub>2</sub> emission in Sri Lanka from 1977-2011 using ARDL model. The variables, which are Gross Domestic Product (GDP), Trade Openness (total trade as a % of GDP), Per capita Carbon Dioxide (CO<sub>2</sub>) emission and per capita energy consumption used in the model. The long-run results indicated that all variables have positive and statistically significant impact on CO<sub>2</sub> emissions.

Kazilkaya (2017) has examined the relationship between carbon dioxide emissions, economic growth, foreign direct investment and energy consumption in Turkey over the period of 1970-2014 using ARDL bound testing method. Turkey is considered as a developed country. The results indicated that economic growth and energy consumption have positive and statistically significant impacts on CO<sub>2</sub> emissions in the long-run and short-run. However, there is not any significant relationship between foreign direct investment and CO<sub>2</sub> emissions in the long-run and short-run. He suggested some policy recommendations that produce and implement more effective and more efficient policies in the context of sustainable development in Turkey.

To examine the long and short-run linkages between economic growth, energy consumption and CO<sub>2</sub> emission in Tunisian (Chebbi and Boujelbene, 2008) conducted

a study using VECM technique over the period 1971-2004. The results indicated that there is a positive linkage between output and energy use and CO<sub>2</sub> emission and energy consumption are positively related in the long-run. The results of the short run, economic growth positively affects the growth of energy consumption.

Kim (2020) has examined the effects of foreign direct investment, economic growth, industrial structure, renewable and nuclear energy, and urbanization on Korean greenhouse gas emission from 1981 to 2014 using ARDL bound test. The dependent variable is CO<sub>2</sub> emissions per capita, which is a proxy for greenhouse gas emissions. Independent variables are the net inflows of FDI, the share of renewable and nuclear energy in primary energy supply as a proxy for renewable and nuclear energy, the urban population in the total population as a proxy for urbanization and the share of manufacturing in GDP as a proxy for industrial structure in the model. The results indicated that economic growth, FDI and urbanization increase of greenhouse gas emissions, while manufacturing industry share, renewable energy and nuclear energy contributed to the reduction of GHG emissions in the long-run. In the short run results indicated that economic growth increases in GHG emissions, while renewable and nuclear energy have contributed to the

reduction in GHG emissions. FDI and urbanization did not play a role in increasing HG emissions in the short term.

Seker et al., (2015) have examined the impact of foreign direct investment, gross domestic product. The square of GDP and energy consumption on carbon dioxide emissions in Turkey over the period 1974–2010 using the autoregressive distributed lag model. The long-run results indicated that the effect of FDI on CO<sub>2</sub> emissions is positive, while the effects of the GDP and energy consumption on CO<sub>2</sub> emissions are positive and statistically significant. In the short-run, the results are found to be similar to those of the long-run model. Granger causality test causality test results indicated the existence of a causality running from all explanatory variables to CO<sub>2</sub> emissions in the long run. They suggested that Turkey should promote energy efficiency with sustainable growth, and encourage more FDI inflows particularly in technology-intensive and environment-friendly industries to improve environmental quality.

## 2.2 Cross-country Analysis

A large number of studies have been conducted on the relationship among foreign direct investment, economic growth, urbanization and trade openness on carbon emission in developed and developing countries as cross-country analysis. Baek et al.

(2009) have examined the dynamic relationship among trade, income and environmental quality using cointegration analysis for a sample of developed and developing countries. The results suggest that trade and income growth increase environmental quality in developed countries and the reverse is evident in most developing countries.

Shaari et al., (2014) investigated the effect of foreign direct investment and economic growth on CO<sub>2</sub> emission in 15 developing countries for the period of 1992 to 2012 applying Johansen cointegration test. The results indicated that increase in FDI does not have any impact on CO<sub>2</sub> emission in developing countries. However, in the developing countries, an increase in economic growth contributes to increase CO<sub>2</sub> emission.

Parikh and Shukla (1995) examined the impact of urbanization on energy use and toxic emissions using a data set of 83 developed and developing countries for the year 1986. According to the results, urbanization has a positive and significant impact on CO<sub>2</sub> emissions.

Martínez-Zarzoso and Maruotti (2011) analyzed the impact of urbanization on CO<sub>2</sub> emissions in developing countries from 1975 to 2003 using the dynamic panel data framework. The results indicated different patterns for three groups

of countries. For the first and third group of countries the elasticity emission-urbanization is positive for low and negative for high urbanization levels. In the second group, urbanization is not statistically significant. Huynh and Hoang (2019) have studied the impact of FDI on air pollution in a sample of 19 developing countries of Asia for the time period of 2002 to 2015. The results indicated that the inflow of FDI in initial stage increases air pollution in developing countries.

Bernard and Mandal (2016) have conducted a study on the trade environment relationship in 60 developing and emerging countries for the period of 2002 to 2012. The study employed fixed effect and GMM model and found that trade openness improves environmental quality and GMM model indicated that population and income have negative impact on environmental quality. Anwar et al., (2020) examined the relationship among CO<sub>2</sub> emissions, economic growth, urbanization and trade openness for a panel of nine Far East Asian countries from 1980 to 2017, using a fixed effect approach. The results indicated that an increase in GDP, urbanization and trade openness have positive impact on CO<sub>2</sub> emission. They suggested encouraging green and sustainable urbanization, strategically regulating and improving industrial structure and sharing of

renewable energy in total energy consumption to reduce CO<sub>2</sub> emission.

Liobikiene and Butkus (2019) have examined the impact of GDP, FDI, trade, urbanization, industrialization, energy efficiency, and renewable energy consumption on environmental degradation. This study was conducted using panel data of 147 countries between 1990 and 2012 and system GMM estimator. Greenhouse gas emission was the dependent variable of the model. The GDP variable has a positive and significant impact on greenhouse gas emission and urbanization and FDI variables have not a statistically significant impact on greenhouse gas emission. Fan et al., (2006) examined the impact of population, affluence and technology on the total CO<sub>2</sub> emissions of countries at different income levels over the period 1975–2000. The results indicated that there is a negative relationship between urbanization and CO<sub>2</sub> emissions and economic growth has the greatest impact on CO<sub>2</sub> emissions. Sharma (2011) has examined the determinants of carbon dioxide emission for a global panel consisting of 69 countries. The results indicated that urbanization does have a negative and statistically significant impact on carbon emissions for the global panel. Furthermore, it reveals that urbanization has a negative, but an insignificant impact on carbon emissions in the low income,



middle income and high-income panels. GDP per capita has a positive impact on CO<sub>2</sub> emission in the low income and middle-income panels.

### 3. METHODOLOGY

#### 3.1 The Co-integration Analysis (ARDL)

To investigate the impact of economic growth, foreign direct investment, urbanization and trade openness on CO<sub>2</sub> emission in Sri Lanka, we adopted the Autoregressive Distributed Lag (ARDL) bounds testing approach developed by Pesaran et al., (2001). The data are of mixed type of I (0) and I (1). This requirement fulfills employing the ARDL model to identify the long-run and the short-run relationship between variables.

#### 3.2 Data and Sources

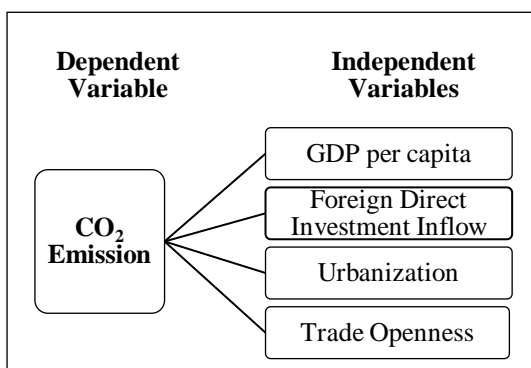
The data used in the empirical analysis was mainly secondary data available in the World Development Indicators. Data on the GDP per capita, foreign direct investment inflows, urbanization and trade openness on CO<sub>2</sub> emission from the year 1978 to 2019 were collected for the study purpose. The study is used only 41 period of data. The justification for the important variables used in this study is based on reviewing the existing theoretical and empirical studies.

**Table 1: Details of the Variables**

Variable, Description	Measure	Source
<b>(CO<sub>2</sub>)</b> Carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring.	Logarithm of CO <sub>2</sub> emissions (Metric tons per capita)	Gasimli et al.,(2019), Kariyawasam and Sumanaratne (2020), Kim (2020), Anwar et al., (2020)
<b>(LFDI)</b> This is a measure of inward direct investment/inflows made by foreigners' in the host country.	Logarithm of foreign direct investment, net inflows (BOP, current US\$)	Huynh and Hoang (2019), To et al., (2019)
<b>(LGDPP)</b> GDP per capita is gross domestic product divided by midyear population.	Logarithm of GDP per capita (Current US\$)	Gasimli et al., (2019), Sharma (2011), Kazilkaya (2017), Anwar et al., (2020), To et al., (2019)
<b>(URBAN)</b> Urban population refers to people living in urban areas.	Urban population growth (Annual %)	Kim (2020), Anwar et al., (2020)

<b>(TR)</b> Trade Openness	(Summation of import and export and divided it by gross domestic product* 100)	Gasimli et al., (2019), Narampanawa (2011), Kariyawasman and Sumanaratne (2020)
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Source: Created by the author cited in World Bank, World Development Indicators. (2020).



**Figure 3: Conceptual Framework**

Source: Created by the author

### 3.3 Model Specification

This study adopted the Anwar et al., (2020) theoretical framework to examine the impact of economic growth, urbanization and trade openness on CO<sub>2</sub> emission. Furthermore, to examine the foreign direct investment on CO<sub>2</sub> emission modified the model adding foreign direct investment inflow variable in the model. The model could be specified as follows:

$$CO_2 = f(FDI, GDPP, URBAN, TR) \quad (1)$$

Where, (CO<sub>2</sub>) CO<sub>2</sub> emissions, (FDI) Foreign direct investment inflows, (GDPP) GDP per capita, (URBAN) is a proxy for urbanization and Trade openness (TR). We converted the variables of per capita CO<sub>2</sub> emissions, foreign direct investment inflows and GDP per capita into their natural logarithmic forms, as the natural logarithms of all variables smooth out the entire data used for analysis.

In an econometric form, equation (1) can be stated as:

$$LCO_{2t} = \beta_0 + \beta_1 LFDI_t + \beta_2 LGDPP_t + \beta_3 URBAN_t + \beta_4 TR_t + \varepsilon_t \quad (2)$$

The ARDL model and the error correction specification are given in Equation (3)

$$\begin{aligned} \Delta LCO_{2t} &= \beta_0 + \beta_1 LCO_{2t-1} \\ &+ \beta_2 LFDI_{t-1} + \beta_3 LGDPP_{t-1} \\ &+ \beta_4 URBAN_{t-1} + \beta_5 TR_t \\ &+ \sum_{i=1}^n \gamma_{1i} \Delta LCO_{2t-i} \\ &+ \sum_{i=0}^n \gamma_{2i} \Delta LFDI_{t-i} \\ &+ \sum_{i=0}^n \gamma_{3i} \Delta LGDPP_{t-i} \\ &+ \sum_{i=0}^n \gamma_{4i} \Delta URBAN_{t-i} \\ &+ \sum_{i=0}^n \gamma_{5i} \Delta TR_{t-i} + e_t \quad (3) \end{aligned}$$

Where,  $\Delta$  denotes the first difference operator,  $\beta_0$  is the drift component,  $e_t$  is the usual white noise error term, ( $\beta_2 \rightarrow \beta_5$ ) correspond to the long-run relationship, the remaining expressions with the summation sign ( $\gamma_{1i} \rightarrow \gamma_{5i}$ ) represent the short-run dynamic of the model. In the next step of the estimation procedure, we obtain the short run dynamics of parameters and long run adjustment of the model by estimating the error correction version of ARDL model pertaining to the variables in the equation (4) is as follows:

$$\begin{aligned} \Delta LCO_{2t} &= \alpha_0 + \\ &\sum_{i=1}^n \alpha_{1i} \Delta LCO_{2t-i} + \\ &\quad \sum_{i=0}^n \alpha_{2i} \Delta LFDI_{t-i} + \\ &\sum_{i=0}^n \alpha_{3i} \Delta LGDPP_{t-i} + \\ &\quad \sum_{i=0}^n \alpha_{4i} \Delta URBAN_{t-i} + \\ &\quad \sum_{i=0}^n \alpha_{5i} \Delta TR_{t-i} + \\ &\gamma ETC_{t-1} + \mu_t \quad (4) \end{aligned}$$

where,  $\gamma$  is speed of adjustment coefficient,  $\mu_t$  is pure random error term.

### 3.4 Estimation Techniques

In order to make the model and variables free from problems associated with time series data employed Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root test approaches to test stationary of the variables. The second step of the estimation bound testing procedure is employed in order to investigate the existence of a long-run relationship the bound tests approach developed by Pesaran et al. (2001). If the calculated F-statistics is greater than the appropriate upper bound critical values, the null hypothesis is rejected implying co-integration. After establishing the evidence of the existence of the co-integration between variables, the lag orders of the variables are chosen by using the appropriate Schwarz Info Criteria. In the next step of the estimation procedure, we obtain the short run dynamics of parameters and long run adjustment of the model by estimating the error correction version of ARDL model pertaining to the variables in the equation (4). Moreover, Diagnostic tests were conducted to check whether the results are robust.

#### 4. RESULTS AND DISCUSSION

##### 4.1 Descriptive Statistic

Descriptive statistics shows the basic characteristics of the data set. The descriptive statistics table highlighted the main features of the examined data set such as mean and median values, maximum and minimum values and values of standard deviation, etc. According to the results of descriptive statistics, all the variables have positive mean values. The estimated values of skewness show that LFDI and TR variables are negatively skewed while on the other hand LCO<sub>2</sub>, LGDPP and URBAN variables are positively skewed.

**Table 2: Descriptive Statistic**

	LCO <sub>2</sub>	LFDI	LGDP P	URBAN	TR
<b>Mean</b>	0.81	18.92	6.84	1.05	67.4
<b>Median</b>	0.81	19.03	6.73	1.00	68.4
<b>Maximum</b>	0.27	21.20	8.31	2.36	88.6
<b>Minimum</b>	-1.59	14.20	5.24	0.05	46.4
<b>Std. Dev.</b>	0.56	1.47	0.94	0.52	12.1
<b>Skewness</b>	0.25	-0.66	0.26	0.78	-0.24
<b>Kurtosis</b>	1.84	3.64	1.83	3.35	1.81
<b>Jarque-Bera</b>	2.79	3.76	2.87	4.46	2.91
<b>P- Value</b>	0.25	0.15	0.24	0.11	0.23
<b>Sum</b>	-33.96	794.46	287.34	43.92	2831
<b>Sum Sq. Dev.</b>	12.90	88.39	36.41	11.14	6029

Source: Author’s computation using E-views 11

##### 4.2 Unit Root Test

The Augmented Dickey-Fuller (ADF) test and Phillips Perron (PP) test were used for testing the stationarity of the data (See below Table 3). The results indicated that the null hypothesis of series contain a unit root cannot be rejected at levels for all variables except LFDI in ADF and PP unit root approaches. The results of the Unit Root Test confirmed that LFDI variable is stationary at the first differences, This reveals that LFDI is integrated in order zero I(0) while all other series, namely LCO<sub>2</sub>, LGDPP, URBAN and TR variables are integrated in order one I(1). It means the data are of mixed type of I (0) and I (1). This requirement fulfills employing the ARDL model to identify the long-run and the short-run relationship between variables.

**Table 3: Unit Root Test Results**

##### Augmented Dickey-Fuller (ADF) Unit Root Test

Variable	Level		1 <sup>st</sup> Difference		I(0)
					I(1)
<b>LCO<sub>2</sub></b>	-1.9	-3.5	-7.0	-3.5	I
<b>LFDI</b>	-7.5	-3.5	-6.3	-3.5	0
<b>LGDPP</b>	-1.7	-3.5	-4.5	-3.5	I
<b>URBAN</b>	-1.8	-3.5	-5.9	-3.5	I
<b>TR</b>	-1.5	-3.5	-5.7	-3.5	I

Note: t- Stat values are given in the table (Trend & Intercept)

Source: Author’s computation using E-views 11

**Phillips-Perron (PP) Unit Root Test**

Variable	Level		1 <sup>st</sup> Difference		I(0)
					I(1)
<b>LCO<sub>2</sub></b>	-1.9	-3.5	-7.0	-3.5	I
<b>LFDI</b>	-7.5	-3.5	-19	-3.5	0
<b>LGDPP</b>	-1.9	-3.5	-4.8	-3.5	I
<b>URBAN</b>	-1.8	-3.5	-5.9	-3.5	I
<b>TR</b>	-1.7	-3.5	-5.7	-3.5	I

Note: t- Stat values are given in the table (Trend & Intercept)

Source: author’s computation using E-views 11

### 4.3 Bound Test Approach to Co-integration Test

The results of the ARDL bound test are presented in table 3 below. The F-statistics in the entire model (6.2882) is higher than upper critical values at 1%, 2.5%, 5% and 10% level of significance. Therefore, the null hypothesis of absence of co-integration is rejected, which implies that there is a long-run relationship among the dependent variables and the explanatory variables in the models.

**Table 4: Bound Test Approach to Co-integration**

Sample: 1978-2019		
Included observations: 41		
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	6.2882S	4
Significance	I(0)	I(1)
10%	2.2	3.09
5%	2.56	3.49
2.5%	2.88	3.87
1%	3.29	4.37

Source: Author’s Computation Using E-views 11

### 4.4 Long-run Coefficient Estimates

**Table 5: ARDL Long-run Form**

Variable	Coefficient	Prob.
<b>LFDI</b>	-0.1539	0.3492
<b>LGDPP</b>	1.1508	0.0006*
<b>URBAN</b>	0.2051	0.0891***
<b>TR</b>	0.0261	0.0025*
<b>C</b>	-7.5475	0.0000*
<b>R<sup>2</sup></b>	0.9865	
<b>F-statistics</b>	252.3103	

Source: Author’s Computation Using E-views 11

Note: Probability values are given in the Table. \*, \*\*, and \*\*\* imply the rejection of the null hypothesis at 1%, 5% and 10%, level of significance respectively.

The regression results indicate, R squared value is 0.9865. This means that 98.65 percent of total variations in CO<sub>2</sub> emission Sri Lanka is explained by changes in economic growth, foreign direct investment, urbanization and trade openness. The F-statistic of with a p value is 252.3103 of 0.000 at 1 percent significance level reveals that all the independent variables were jointly significant in predicting CO<sub>2</sub> emission in Sri Lanka.

Table 5 reveals that long term coefficients. LGDPP, and TR variables are statistically significant at the 1% significance level. URBAN variable is statistically significant at the 10% significance level. LFDI with a coefficient of 0.1539 has negative impact on CO<sub>2</sub> emissions for the period of 1978-2019 in Sri Lanka. However, LFDI variable is insignificant. It indicated that, LFDI variable can not significantly explain the variation in LCO<sub>2</sub> throughout the years. Theoretically, the effect of FDI on the CO<sub>2</sub> could have two possible effects. The effect could be negative, in the sense that increased FDI inflows could lead to increased environmental emissions and increased FDI inflows could lead to decreased environmental emissions (Demena

& Afesorghor, 2020; Seker et al., 2015 and Kim, 2020). Some researchers found that insignificant relationship between foreign direct investment and CO<sub>2</sub> emissions (Kazilkaya, 2017).

LGDPP with a coefficient of 1.1508 has a positive and statistically significant impact on CO<sub>2</sub> emissions in the long-run. This result is in line with these empirical studies (Kazilkaya, 2017; Kim, 2020; Sekeret al., 2015; Chebbi & Boujelbene, 2008; Fan et al. 2006, Kariyawasam and Sumanaratne, 2020 and Sharma 2011). URBAN with a coefficient of 0.2051 has a positive and statistically significant impact on CO<sub>2</sub> emissions in the long-run. This result is in line with these empirical studies (Kim, 2020; Martínez-Zarzoso and Maruotti, 2011). TR has positive and statistically significant impacts on CO<sub>2</sub> emissions in the long-run. In the sense that increased trade openness could lead to increased environmental emissions in the long-run (Kariyawasam and Sumanaratne, 2020).

#### 4.5 Short-run Coefficient Estimates and Error Correction Representation

Table 6: ARDL Short-run Form

Variable	Coefficient	Prob.
LFDI	0.0243	0.1593
LGDPP	-0.2350	0.0668***
URBAN	-0.0714	0.1970
TR	0.0026	0.2731
ETC(-1)*	-0.2725	0.0000*

Source: Author's Computation Using E-views 11

Note: Probability values are given in the Table. \*, \*\*, and \*\*\* imply the rejection of the null hypothesis at 1%, 5% and 10%, level of significance respectively.

Table 6 reveals that short-run coefficients. LGDPP variable is statistically significant at the 10% significance level. LGDPP variable has a negative impact on CO<sub>2</sub> emissions in short-run. It indicated that increased LGDPP could lead to decreased CO<sub>2</sub> emissions in the short-run.

The error correct term (ECT(-1)) coefficient is significant at 1% significance level with the negative sign which is between 0 and -1, implying that the model can converge back to long-term equilibrium quickly after a short-term shock. The value of -0.2725 indicates that the disequilibria from this period's shock can be adjusted in the next period about 27.25%.

#### 4.6 Diagnostic Tests

The model is free from serial correlation and heteroscedasticity. Moreover, the functional form is correct and stochastic residuals are normally distributed. The estimated model satisfies all indispensable diagnostic tests.

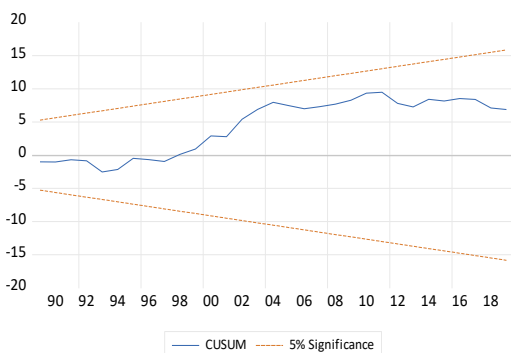
Table 8: The Results of the Diagnostic Test

Items	Test Applied	P Value
Serial correlation	Breusch-Godfrey Serial Correlation LM Test	0.2658
Normality	Normality Test (Jargu- Bera)	0.7174
Heteroscedasticity	Breusch-Pagan-Godfrey	0.4636
Functional Form	Ramsey's reset test	0.1891

Source: Author's Computation Using E-views 11

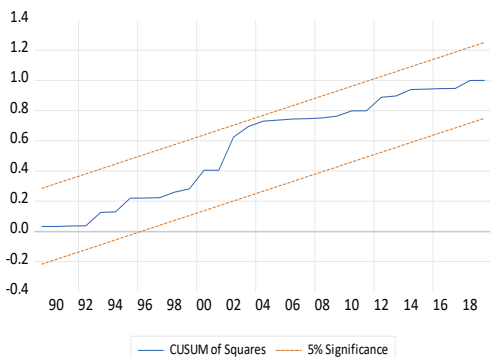
#### 4.8. The Results of Stability Test

The graphs of the CUSUM and CUSUM of squares test confirms that the model is stable since the residual plot lies between the lower and upper critical bounds at the 5% level of significance. That is, the selected model has stable parameters, which can be used for long-term forecasts.



**Figure 4: CUSUM Stability Test**

Source: Author’s Computation Using E-views 11



**Figure 5: CUSUM of Squares Stability Test**

Source: Author’s Computation Using E-views 11

## 5. CONCLUSION

This study analyzed the impact of foreign direct investment, per capita GDP, urban population growth is a proxy for urbanization and trade openness on CO<sub>2</sub> emission in Sri Lanka over the period 1978-2019. The

econometric methodology used in this paper is the Autoregressive distributed lag model. According to ARDL bounds test, the long-run equilibrium among the variables is confirmed. Then, the long-run and short-run coefficients were estimated using ARDL error correction model.

In the long run, the foreign direct investment can not significantly explain the variation in carbon dioxide emission throughout the years. However, the results indicated that increased economic growth, urbanization and trade openness could lead to increased environmental emissions in the long-run. However, GDP per capita could lead to decreased environmental emissions in the short-run. In order to prevent the increase of CO<sub>2</sub> emissions caused by economic growth, urbanization and trade openness, the level of CO<sub>2</sub> emissions should be considered when making policies to improve economic growth, and urbanization. Sri Lanka should design more green and sustainable urbanization and promote renewable energy consumption in urban area. Moreover, the results suggest the importance of trade reforms and policies to be accompanied by strong environmental policies in the long-run.



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## **The Impact of Salespersons' Interaction on Customer Satisfaction of Textile Shops: A Study in Kiribathgoda Area**

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### **Abstract:-**

All businesses are trying to win the market by competing with other rivalries. The Textile industry is not exceptional for that. Textile shops are also one of the well-known retail markets in the industry that depend on customer satisfaction for their success. The main objective of the study is to investigate the impact of salespersons' interaction on customer satisfaction of textile shops in the Kiribathgoda area since salespersons are the change agents to change the minds of customers. Data were collected through a structured questionnaire among 100 respondents based on the simple random sampling method. Researchers incorporated correlation & regression analyses by using the SPSS version 20.0 software for analyzing the data. Major findings showed that all three dimensions of salespersons' interaction -Communication skills, Empathy and Trust have a positive relationship with Customer Satisfaction. 61.4% salespersons' interaction impacted on customer satisfaction and Trust has a higher impact (39.3%) on Customer Satisfaction rather than Communication skills and Empathy.

**Keywords:-** Communication Skills, Customer Satisfaction, Empathy, Salespersons' Interaction, Trust

### **1. INTRODUCTION**

The textile shops come under the industry of textile, garment and accessories. This is one of the biggest industries in Sri Lanka. It

plays a vital role in advancing the Sri Lanka's economy. Clothing is a basic need of all human beings and some people spend more money on garments than their food requirements. It was

believed that clothing or garments was first developed even 650 thousand years ago. In today's context, the garment industry is a huge business that added more value to the world economy too. The wholesale clothing supply is increasing worldwide in all the sectors of the industry, whether it can be men's clothing, women's clothing, kids clothing and infant wear. In the textile, garments and accessories business, people can find many individuals and companies which are catering to the business needs of various levels given the value of modern fashion and trends.

### **1.1 Research Problem**

In the textile shops salespersons are the employees who directly meet the customers and influence the minds of the customers. Due to the interaction between customers and salespersons is the essential factor for customer satisfaction and increase the sales (Gocek and Beceren, 2012). Hence, salespersons in every textile shop must consider about this factor for their business' success. They work in-between the company and the customers. They are the people who can build the relationship with customers. And also customers always try to measure the company service by evaluating the salespersons services (Basir et al., 2010). Salesperson is the person who can satisfy the customers by providing good service. In this study researchers try to find out how far the

salespersons' interaction impact on customer satisfaction. Satisfaction is a phenomenon expressing that the performance and benefits of the products exceed the expectations of the customers (Peter and Olsan, 2005). Literature showed many factors which influence the customer satisfaction in the textile industry (Cuc, 2010). However, there is lack of literature related with the salespersons' interaction and customer satisfaction locally and globally. These literature opened avenues to motivate the researchers to do a study on how the salespersons' interaction impact on customer satisfaction.

### **1.2 Objectives of the Study**

- To investigate how far the salespersons' empathy influence to satisfy the customers.
- To evaluate how far the salespersons' communication skills satisfy the customers.
- To identify the motivation methods of salespersons to improve the customer satisfaction.

### **1.3 Literature Review**

There are external customers for business. Hence, every business always tries to understand about their customers mind. Salespersons are the internal

customers for the business. Good interaction between customers and salespersons will provide support for easy of the transactions.

### 1.3.1 Salespersons' Interaction

Salesperson interaction is an important factor in the textile shops. They are the people who directly meet the customers and identify their needs. When buyers enter into the textile shop firstly they meet the salespersons. At once they catch the eyes of buyers, they welcome them and show their first impression towards them. Previous studies found out different factors related with customer satisfaction and salespersons' interaction (Gocek and Beceren, 2012).

An empirical study on the relationship between sales skills and salesperson performance stated that many companies, salespersons are the most important marketing tool in the interface between the companies and their customers (Basir *et. al.*, 2010). Baldauf and Cravens (2002) explained in their study of the effect of moderators on the salesperson behavior performance and salesperson outcomes performance and sales organization effectiveness relationship: operating at the interface between the organization and its environment, showed salespersons perform important boundary-spanning roles. Good salespersons may offer substantial performance

improvements in today's increasingly competitive business environment. Futrell (2006) explained a top-quality salesperson who maximizes revenues from current existing customers and systematically identifies and manages new prospects well and which will allow a business entity to grow faster than its competitors.

The study of the effects of customer expectations and store policies on retail salesperson service, satisfaction and patronage exhibits in a retail store, services can encompass a variety of activities, including salesperson assistance, credit, gift wrapping and package delivery. Within those various activities, salesperson service is important to study (Stanforth and Lennon, 1997). Hence the impact of salesperson behavior is less clear and may have a significant effect on customer satisfaction and future patronage. Research of Reynolds and Beatty (1999) on customer benefit and company consequences of customer-salesperson relationships in retailing shows that relationship generate benefits and value to customers were not only on satisfaction but also on loyalty. This research finding also showed that when consumer perceived social benefits and high functional, the consumer will be satisfied by salesperson. Gutman's (1982) study of a means-end chain model based on consumer categorization process indicated consumers choose products or services based on



desired benefit. Reynolds and Beatty (1999) further stated that satisfaction with salespersons correlated to satisfaction with the company. They argued that customers' positive feelings towards their salesperson often transferred to the company. McMurry (1961) explained a successful salesperson to be a person who possessed a winning is coupled by a "compulsive need to win and hold the affection of others". McMurry (1961) further identified some qualities of salesperson, such as a high energy level, self-confidence, a hunger for money, a well established habit for industry and a view of obstacles as challenges. A few years later McMurry's (1961) finding, Mayer and Greenberg (1964) showed that two basic qualities were essential in a good salesperson, such as empathy and ego drive.

Munshi and Hanji (2014) described in their study of A multidimensional subjective scale development for measuring sales performance of retail sales personnel within retail stores, salespeople are the main point of contact for customers and they are responsible for communication, store management, sales activities, solving customers' problems, helping them to make purchase decisions and thereby realizing sales closures and generating sales revenues.

The study of Ramayah and Leen (2013) on what drives relationship quality? A study of

two retail clothing stores showed for the retail clothing stores, satisfaction and loyalty of a customer are no longer solely depending on the core product (it means apparel) they also on the service encounter which is the time when the customer interacts directly with the sales people and the store's elements. In this regard, it is vital for retailers to acquire knowledge of the factors that determine the relationship quality between service encounter and the customer, in the quest for customer loyalty. A company's success in being able to retain its customers will depend very much on how a company can successfully add value to its customers' shopping experience. The findings of Ramayah and Leen (2013) described trust and satisfaction were the two elements for the quality of relationship. Within their study they explained five variables which influence for the satisfaction such as physical aspects, reliability, personal interaction, problem-solving and policy.

Within their study they explained those five variables with the help of others studies. The study of determinations of relationship quality and loyalty in personalized services by Shamdasani and Balakrishnan (2000) exhibits Reliability and personal interaction and problem-solving are the social factors involving the salespeople who are within a store's environment. Reliability is viewed as a combination of keeping promises

and performing the services right. Personal interaction involves two sub dimensions such as service personnel inspiring confidence and being courteous. Problem solving addresses the handling of returns and exchanges as well as complaints. Therefore, the service contact personnel's characteristics such as friendliness, confidence, honesty, expertise and knowledge of customers are important as they strongly influence relationship quality.

### 1.3.2 Communication skills

Within the textile shops transactions typically are initiated, maintained and completed on a person-to-person basis (Williams and Spiro 1985). The salesperson is the person who deals with customers interactively in a textile shop. The retail salesperson's most basic activity during this exchange is communication. Successful selling therefore depends on successful interpersonal communication. Scott (2005), explained communication is about sending, receiving, and understanding information and meaning. He showed that "receiving" and "understanding" are the most important operations in the communication process, since the response of the receiver defines whether the communication attempt is successful or not. He further defined two types of communication that are related to workplace communication; the

effective and the efficient communication.

According to the study of Iksan *et. al.*, (2012) on communication skills among university students' exhibits communication can be divided into two- the verbal communication and the non-verbal communication. Salespersons can also use verbal as well as non-verbal communication methods when dealing with their customers. Verbal communication means deal with customers by using words.

Non-verbal communication includes body movements, voice qualities and physical distance between communicators. The study of Gabbott and Gillian (2001) showed that non-verbal communication channels cover the 70% or even the 90% of workplace communication. An exploratory study on relational selling strategy and key account managers' relational behaviors showed communication is of key significance in the relationship process between buyers and salespersons. It can be perceived as the main element of the satisfaction (Guenzi *et al.*, 2007). (Oliver,1999) explored that loyalty of the business customer is based not only on product features but also on convergence of personal and social forces that exist between professional buyers and key contact personnel within supplier firms. The study of the link between salesperson job satisfaction and customer satisfaction by Homburg and Stock (2004) highlighted the role

of key contact personnel in satisfying customers in the business market is an important factor. According to the study of Mohr and Nevin (1990) showed that communication processes underline most aspects of organizational interaction and therefore, are typically viewed as being critical to organizational success.

### 1.3.3 Trust

The study of Swan *et. al.*, (1999) explained the development of trust between salesperson and their customers has traditionally been considered a critical element in developing and maintaining a successful sales relationship. The trust a customer has in a salesperson is generally thought to be a key determinant of the quality of their relationship. They further showed that customer trust of the salesperson has two components, affective and cognitive. Affective component explains the feeling of secure or insecure about relying on the salesperson, and cognition is the belief that the salesperson has both the necessary competence and motivation to be relied upon. A customer is any person who had, or can have some interaction with a salesperson or salespersons. According to the study of Customer – sales associate retail relationships explained customer trust in the salesperson is defined as a trust belief by which the salesperson can achieve long-term profit from customers (Beatty *et.al.*, 1996).

Customer trust in the salesperson could increase through repeating deals between the salesperson and customer in which the salesperson seems to be rational, suitably honest, fair, responsible and charitable. The study of Chen and Mau (2009) also supported the above finding in the insurance industry. The trust affects on the loyalty of customers. Therefore, how to create and keep customers' trust in the salesperson and the company is a vital factor to develop a long-term relationship with the customers which leads to the customer satisfaction and retention.

Studies show that productivity, income, and profits are positively or negatively impacted depending on the level of trust in the work environment. Trust can be created or destroyed through personal perceptions and behaviors. It is predicated on who we are and how we are raised and is shaped by our experiences and perceptions of others' behavior (Anderson *et.al.*, (1994).

### 1.3.4 Empathy

Bush *et. al.*, (2001) defined the term empathy as the capability of visibly defined project for the trust of others, to attain and visualize the appropriate assessment of other's beliefs, attitudes and behavior. Davis (1983) also describes empathy in his study of measuring individual differences in empathy: evidence for a multidimensional approach as the response of person towards

the acknowledged experiences of others. Based on the study of Empathy development, training and consequences by Goldstein and Michaels (1985) response spread specify two ranges, such as cognitive and local response that is considered as the expertise to be familiar with thinking, emotions and objectives. McBane (1995) explained second type of response within his study of Empathy and the salesperson: A multidimensional perspective, as the psychological response to others. The study of how to measure service orientation by Hogan and Hogan (1984) described the significance of empathy in buyer-seller interaction has been accepted. Ramsey and Sohi (1997) showed mostly results were linked with the influence of empathy on interactions with customers. Effective interpersonal listening and personal selling by Castleberry and Shepherd (1993) conclude that there is a positive relationship between empathy and interactional procedure of workers and consumers. The study of the link between sales people's job satisfaction and customer satisfaction in a business-to-business context: A dyadic analysis by Homburg and Stock (2004) explained lower levels of worker empathy leads to weaker interactional levels of worker and customers and that leads to less customer satisfaction. Furthermore in his study, he described the variable of empathy plays a mediating role between the job satisfaction of

workers and Customer satisfaction. The greater degree of empathy of salespersons stimulates the relation of job satisfaction of salespeople and consumer satisfaction. Splauding and Plank (2007) described in order to build and maintain long term profitable customer relationships it is important that salespersons are empathetic towards their customers. In their studies showed that Empathetic salespeople are better able to understand customer's situations by putting themselves in their customer's positions. Further more in doing so, salespeople are better able to understand and recognize customer concerns cognitively and emotionally. The study of Salesperson adaptive selling behavior and customer orientation: A meta-analysis by Franke and Park (2006) found out that the salesperson is more able to customize their product solutions to satisfy customer needs and wants. According to the study of examining the effect of salesperson behavior in a competitive context by Ahearne *et. al.*, (2007) showed when customers feel that salespeople are empathetic towards them, customers are likely to feel that salespeople care about their points of view and are not just trying to sell their products or services. The studies of Conway and Swift (2000) and Wang (2007) exhibited therefore, salespeople who have higher levels of empathy have fewer barriers to overcome in developing customer satisfaction.

The study of Greenberg and Greenberg (1983) explored when customers feel that salespeople are empathetic towards them, they feel more confident that the salespeople have a better understanding of their concerns and problems.

### 1.3.5 Customer satisfaction

Usually, all the persons have some expectations about whatever situation faced by them. As a customer he/she also has some expectation when they get the goods or services. If the good or service provider cannot meet their expectations, the customers will not satisfy. Salesperson must find out the importance of the customer satisfaction. In the textile, garments and accessories industry also consider the customer satisfaction as important factor for their success. Generally customers go to textile shops for buying garments. At that time quality of garments and salespersons performance is very much important factor to determine customer satisfaction.

According to the study of 'The importance of customer satisfaction in retention to customer loyalty and retention' by Singh (2006) described satisfaction is an overall attitude towards a product provider or an emotional reaction to the difference between what customers expect and what they actually receive regarding the fulfillment of a need. Kotler (2000) also defines satisfaction as

a person's feelings of pleasure, excitement, delight or disappointment which results from comparing a products perceived performance to his or her expectations. According to Hitt *et al.*,(2007) the ultimate objective of the organizations nowadays is to satisfy a cluster of target customers with the help of competitive advantage due to the returns achievement are possible through building profitable relationships with customers and is considered the lifeblood of operating firms.

A study of the relationship between customer satisfaction and willingness to pay' by Homburg *et. al.*, (2005) concluded that customer satisfaction significantly affected consumers' motivation to pay. Higher customer satisfaction results in repeat/frequent purchases.

Moreover, the findings of Day (1994) in his study of the 'capabilities of market-driven organizations' concludes that consumer satisfaction leads to higher level of consumer retention while the study of customer satisfaction as an antecedent of price acceptance by Huber *et. al.*,(2001) asserts that customer satisfaction is associated with willingness of customers to pay higher prices. In the above stated literature, various factors impact on the interaction between salesperson and customer satisfaction. The study of Evanschitzky *et al.*,(2012) show that adaptive

selling and employee satisfaction positively impact on customer satisfaction. An empirical study of Zia and Akram (2016) found three variables which were salesman's ethical behavior, listening behavior and customer orientation impacted on customer satisfaction in packed milk industry in Pakistan.

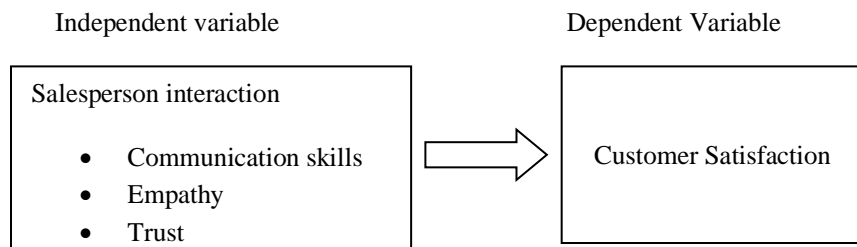
However, researchers selected three factors under salesperson interaction dimensions after reviewing the literature carefully - the Communication skills, Trust and Empathy which are more relevant to Sri Lankan context and by using these factors examine how these factors impact on customer satisfaction.

## 2. METHODS

### 2.1 Conceptual Framework

Concepts or Constructs are ideas that represent the phenomenon.

The conceptual framework consists of concepts that are placed within a logical and sequential design. By considering about the literature review, researchers developed the conceptual framework. The study concerns about the concepts of salespersons' interaction and customer satisfaction. The researchers used three dimensions (communication skills, empathy and trust) under the salespersons' interaction as independent variable and the customer satisfaction is considered as the dependent variable. The conceptual framework shows the relationship between those three dimensions and the customer satisfaction. By using the following conceptual model (see Figure1) researchers explained the relationship between independent and dependent variables.



**Figure 1: Conceptual Framework**

*Source: Adopted from Stanforth and Lennon, (1997) Williams and Spiro (1985), Swan et. al., (1999), Homburg and Stock (2004) & Singh (2006)*

### 2.2 Sampling Plan

Sampling is a process of selecting a subset of randomized number of members of the population of a study and collecting the data. In

this study, researchers' selected 10 popular textile shops in Kiribathgoda area on the basis of purposive sampling to increase the validity and the area is the home town of one of the authors.

Thilakawardhana Textile shop, Kandy Textile shop, Osaka Textile shop, Nimalee Textile shop, Sunanda Textile shop, J Love Textile shop, Gamma Textile Shop, Bellro Textile Shop, City Line Textile Shop and Nile Textile Shop are among them.

### **2.3 Data Collection Methods**

The research study focused on primary data. Researchers developed a questionnaire for data collection by including the five point Likert scale questions to measure the three dimensions (communication skills, trust and empathy) under the salespersons' interaction and the customer

satisfaction of the textile shops. As per the information given by the owners of the textile shops, the total number of customers per day in all 10 shops is 285 excluding the festival season. (25-40 customers per day in each shop) Researchers selected 100 as the sample size and the questionnaires were distributed and collected among 10 customers of each of the 10 textile shops based on the simple random sampling method.

### **2.4 Data Analysis Methods**

Researchers used the SPSS Version (20.0) package to analyze the data which were received from the survey study. The researchers used the frequency tables to show the respondents profile. By

using descriptive statistics, researchers considered the mean values of independent variables and identified the importance of those variables for dependent variable. However, this analysis is excluded in this paper. Researchers used the quantitative analysis techniques to analyze the data.

#### **2.4.1 Correlation Analysis**

Pearson correlation coefficient ( $r$ ) is used to determine the strength and direction of the two continuous variables. By using this correlation analysis, researchers identified the relationship between the independent variables (communication skills, trust and empathy) and the dependent variable (customer satisfaction) in the study and tested the hypotheses.

#### **2.4.2 Regression Analysis**

Regression analysis is used for identifying the impact of independent variables on dependent variables. Under this analysis, researchers used the Beta value and significant value to identify the impact of salespersons' interaction on customer satisfaction.

### 3. RESULTS

#### 3.1 Correlation Analysis

Correlation analysis is a statistical analysis that defines the variation in one variable by the variation in another, without establishing a cause-and-effect relationship. The coefficient of correlation is a measure of the strength of the relationship between the variables; that is, how well changes in one variable can be predicted by changes in another variable. In this study, researchers used Pearson Correlation coefficient (r) to determine the strength and direction of the two continuous variables. Pearson Correlation coefficient (r) can take values from -1 to +1 and size of the value of the coefficient indicates the strength of the relationship and sign (- or +) indicates the direction. If the correlation coefficient is 0, there is no relationship between the variables. The Table 1 shows the correlation between the Salespersons' interaction dimensions and customer satisfaction.

**Table 1: Correlation results of salespersons' interaction dimensions and customer satisfaction**

		Customer Satisfaction
Customer Satisfaction	Pearson Correlation Sig. (2-tailed) N	1  100
Communication Skills	Pearson Correlation Sig. (2-tailed) N	.583** .000 100
Empathy	Pearson Correlation Sig. (2-tailed) N	.241* .016 100
Trust	Pearson Correlation Sig. (2-tailed) N	.632** .000 100

Note: \* and \*\* indicate statistically significant coefficients, at the 5% and 1% levels respectively. (Source: Survey Data, 2020)

The above Table 1 shows the significant values of salespersons' interaction dimensions. Since these are less than 0.05, researchers can predict the relationship between the salespersons' interaction dimensions and customer satisfaction. According to the above table, the significant values



are 0.000 for communication skills and trust and 0.016 for empathy. All these values are less than 0.05. Therefore, researchers can prove that there is a significant relationship between the salespersons' interaction on customer satisfaction in Textile shops in Kiribathgoda area.

By seeing the Pearson correlation values, researchers can infer the relationship between the three dimensions of salespersons' interaction and customer satisfaction. There is a positive correlation between communication skills and customer satisfaction (0.583); a positive correlation between empathy and customer satisfaction (0.241) and finally a positive correlation between trust and customer satisfaction (0.632). From the analysis, researchers found the communication skills, empathy and trust dimensions of salespersons' interaction have positive relationship with customer satisfaction.

### 3.2 Regression Analysis

In regression analysis, researchers first checked the fitness of good of the research model by using following model summary in Table 2. Since the adjusted  $R^2$  is more than 0.5, the fitness of the model is confirmed.

**Table 2: Regression Analysis for salespersons' interaction and customer satisfaction**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.786 <sup>a</sup>	.618	.614	.170

a.Predictors: (Constant), Communication skills, Empathy, Trust and Customer satisfaction

(Source: Survey Data, 2020)

The above table shows that the adjusted  $R^2$  value is 0.614. That means 61.4% salespersons' interaction affected on customer satisfaction. It indicates that salespersons' interaction has higher impact on customer satisfaction than the other factors. The other factors such as physical aspects of shop, policies of the shop, consumer expectations etc. have only 38.6% of impact on customer satisfaction which supports the findings of previous literature (Gocek & Beceren, 2012).

**Table 3: Regression Analysis for Independent variable and customer satisfaction**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1. Comm.Skills	.583 <sup>a</sup>	.340	.333	.224
2. Empathy	.241 <sup>a</sup>	.058	.048	.268
3. Trust	.632 <sup>a</sup>	.399	.393	.214

a.Predictors:(Constant),  
Communication skills, Empathy,  
Trust  
(Source: Survey Data, 2020)

According to the data analysis, researchers analyzed the impact of Communication skills, Empathy and Trust on Customer Satisfaction individually. The Adjusted R<sup>2</sup> value for communication skills is 0.333, for Empathy 0.048 and for Trust 0.393. That means 33.3% of communication skills, 4.8% of empathy and 39.3% Trust impact on customer satisfaction. Based on this analysis, Trust has higher impact on customer satisfaction rather than Communication Skills and empathy.

#### 4. DISCUSSION

Based on the results the hypotheses **H<sub>1</sub>**, **H<sub>1a</sub>**, **H<sub>1b</sub>** and **H<sub>1c</sub>** are supported to the salespersons' interaction and customer satisfaction. Summary of hypotheses testing is illustrated in Table 4.

**Table 4: Hypotheses testing**

Hypotheses	Supported/ Not supported
<b>H<sub>1</sub></b> - There is an impact of salespersons interaction on customer satisfaction of textile shops in Kiribathgoda area.	Supported
<b>H<sub>1a</sub></b> - There is an impact of salespersons' communication skills on customer satisfaction of textile shops in Kiribathgoda area.	Supported
<b>H<sub>1b</sub></b> - There is an impact of salespersons' empathy on customer satisfaction of textile shops in Kiribathgoda area.	Supported
<b>H<sub>1c</sub></b> - There is an impact of salespersons' Trust on customer satisfaction of textile shops in Kiribathgoda area.	Supported

Source: Developed by researchers

Researchers used correlation analysis to explain the relationship between the salespersons' interaction and Customer satisfaction. The regression analysis was used to explain the impact of salespersons' interactions on customer satisfaction. By using the above analyses, researchers explained that the findings were supported by the previous studies particularly the  $H_{1a}$  was supported by the findings of Castleberry and Shepherd (1993); the  $H_{1b}$  is supported by the findings of McBane (1995) and Spaulding and Plank (2007). Finally the  $H_{1c}$  is supported by the findings of the predecessors Chen and Mau (2009) and Ramayah and Leen (2013).

## 5. CONCLUSION

Researchers considered the impact of salesperson interaction and customer satisfaction of textile shops in Kiribathgoda area in the present study. By doing this study researchers expect to find the impact of salespersons' interaction on customer satisfaction. And also researchers try to find out how the salespersons' interaction dimensions impact on customer satisfaction rather than other factors which are the physical aspect of the

store, customer expectations, price etc.

By seeing the relationship results of salespersons' interaction and customer satisfaction, researchers concluded that all three dimensions of salespersons' interaction (Communication skills, Empathy and Trust) have positive relationship with customer satisfaction. That means, if the Textile shop's salespersons give high quality services by considering about all three dimensions, it leads to higher customer satisfaction. Therefore, the salespersons of the textile shops should try to give quality services by considering about the three dimensions for getting higher customer satisfaction. Moreover, this study shows the salespersons' interaction highly supported to customer satisfaction.

The salespersons of the textile shops should consider about the better relationship with the customers in every time because it highly support to customer satisfaction. If the customers cannot get fulfillment of their expectations from the Textile shops, they will not visit to that textile shop for purchases again and again. Since salespersons are one of the factors for attracting customers, they must pay attention on their qualities and how to interact with customers.

Those three factors highly supported salespersons to build their interaction with customers and satisfy them. Finally, from this study researchers can derive to the conclusion that these three dimensions of salespersons' interaction leads to the customer satisfaction. Therefore, researchers can conclude that there is an impact of salespersons' interaction on customer satisfaction in Textile shops in Kiribathgoda area.

### **5.1 Recommendations**

By conducting this study of the salespersons' interaction and customer satisfaction of Textile shops in Kiribathgoda area, researchers recommend the under mentioned considerations from the findings of the study to the interested parties. Researchers identified that the Textile shops in Kiribathgoda have given more importance for the communication skills and trust dimensions. By giving more consideration to these dimensions, they get higher the level of customer satisfaction. The empathy has less impact on customer satisfaction.

When considering the trust, they try to build a cordial relationship with customers. The salespersons always provide service which is matched with the customers'

requirements. At that time salespersons can highly satisfy the customers. Salesperson should be a good friend for customers in the shop. If they promise to do a service, salespersons hurry to do this without time delay. Trust always binds with feelings. Salespersons should create relationship based on customer feelings hence the customers feelings and their behavior are different from person to person. Therefore, salespersons must understand customers mind and should build good relationship with them.

According to this study communication skills have an impact on interaction between customers and salespersons. From this study, researchers consider Communication skills are necessary to build good customer relationships and satisfaction. Basically salespersons have the ability to speak their native language correctly. Using mother tongue is one of the common and basic factors to create successful relationship. In Kiribathgoda area, most of the customers are speaking Sinhala. Salespersons are also fluent in Sinhala. It is an advantage for the Textile shops. Those Textile shops' salespersons have the ability to communicate with their customers correctly. In Kiribathgoda area textile shops, customers can understand the

speaking way of the salespersons at once. This is the key point to the success of the shops. Salespersons body language and what they speak are similar. In case of shops in Kiribathgoda area, there is no difficulty for customers to understand the communication of salespersons.

Last dimension is empathy. This factor has low impact than other two factors. In the textile shop within Kiribathgoda area have huge customer base for the textile shops. Therefore, salespersons want to serve a large amount of customers. Due to this reason, salespersons could not pay attention for each and every customer. That is one of the weaknesses for the growth of the shop. Since there is a wide span of customer base, salespersons fail to understand customers' specific needs and wants. So they are unable to fulfill their needs. However, the opening hours are convenient to all customers. The customers of those textile shops always busy with their works. Hence, they expect and willing to shop at their free time. These shops are open until mid night. Therefore, customers can purchase garments after finishing their works. Salesperson is unable to be a guide to the customers all the time since they ought to deal with a pool of customers in the shops. Further, salespersons are unable to understand customers' personal interest and attitude regularly.

Therefore, researchers recommend that salespersons should increase their other qualities like friendliness, expertise and confidence to get the higher customer satisfaction.

## **5.2 Directions for Future Research**

Future researches can be extended to identify further factors except these three dimensions through an in-depth study and can do studies to identify the importance of those dimensions for salespersons' interaction in Textile shops by considering the large sample. For that, they can get the sample from all provinces in Sri Lanka or multiple areas in Sri Lanka. Future researchers can consider about cultural factors or demographic factors as moderate variables other than the salespersons' interaction dimensions which have impacted on customer satisfaction in textile shops. Moreover, this study was conducted prior to the COVID-19 pandemic situation in the country. Similar studies could be extended to understand the situation during the pandemic and post- pandemic period in Sri Lanka.

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## **Effect of Computer-Mediated Communication System on Job Satisfaction of Employees in Transmission Division of Ceylon Electricity Board, Sri Lanka**

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### **Abstract**

This study aims to investigate how computer mediated communication (CMC) system have impacted on employee's job satisfaction of Ceylon Electricity Board, Sri Lanka to fill the gaps in the computer mediated communication literature and provide useful information on interpersonal relationships within an organization. The sample of the study consisted of 400 respondents representing executive and medium level technical service (MLTS) staff of the transmission division of Ceylon Electricity Board in Sri Lanka. Self-administered questionnaire and the web-based questionnaire was used to collect primary data while data were analyzed with Partial Least Squares path modeling (PLS). The research findings indicated that computerized maintenance management is the most significant factor impacting on the employees' job satisfaction and it also identified that there is a positive and statistically significant impact of instant messaging and electronic mails on employees' job satisfaction. The results provide valuable input regarding the instant messaging and job satisfaction.

**Keywords:-** Computer-mediated communication system, computerized maintenance management solution electronic mails, instant messaging, and job satisfaction

### **1. INTRODUCTION**

With the development of technology the communication process and pattern in the workplace has been dramatically changed (Paraskeva, Eriksson, Johansson, & Peter, 2019). Today technological innovations and

internet are major aspects which have influenced the communication approaches in the organizations. Koschmann (2012) states that there is a rapid growth in the use of technology for communication every year and as well as the new advancements are made in the same frequency.

Many organizations have begun to practice new communication technology in employee communication (Anton, 2012). Especially Computer-mediated communication (CMC) system has radically emerged and been introduced in many workplaces to make a significant shift towards technological adoption in their communication practices (Sayago, Sloan, & Blat, 2011). In this era, computer-mediated communication is a basic infrastructure that every organization need to be equipped with.

The computer-mediated communication system has done significant changes in the ways people communicate and associate with each other in both government and private sector organizations today (Jayalal & Balasuriya, 2015). With the use of CMC, system information can be sent to single as well as multiple recipients thus making the distribution of information easier and quicker than ever before (Wellman, Salaff, Dimitrova, & Garton, 1996). Organizations believe that access to and use of this information would result in increased worker productivity and efficiency and make it easier for them to communicate with employees (Bob & Sooknanan, 2014). With this rapid change in communication technology, the organizational culture and employees working environment, organizational language, interpersonal relationships of the

employee has changed as a result of CMC effects. These changes which were created due to CMC system influence has made a significant impact on employees work life and their job satisfaction (Dhir, 2018). In line with the discussion, job satisfaction may be identified as a construct which is concerned with the psychological incidents at the workplace that adds greater linkage among employees, their jobs and their organization (Okwudili, 2012).

On the other hand, the employees should have up-to-date technological skills or have to develop those skills to adapt to the digitalizing work environment. Learning and adapting to new technologies may increase the workload and cause stress (Bordi, Heikkilä, & Okkonen, 2014). The number of technologies used at work, constant changes in ICTs, plus malfunctions and usability problems of the systems may increase the risk of lowered well-being and satisfaction (Day, Scott, Kelloway, 2010). Thus, if the CMC system has an impact on job satisfaction, then organizations using CMC system have an effective tool for influencing employee job satisfaction. With technological advancements, most of the organizations get improved by adopting the latest components to their communication practices (Lee, 2011).

Most of the researches (Belle, Hall, Riekert, & Muganda, 2007; Lau, 2014; Bob & Sooknanan, 2014) have conducted researches on the topic of impact of computer-mediated communication on the interpersonal relationship of couples, groups or workers. Nevertheless, every organization not only in western countries all over the world are using the CMC system as their main communication media, there are only a few studies done on workers performance or employee satisfaction in the CMC environment. However, most of the CMC studies focus on the CMC effect, use and user satisfaction. According to the literature found (Epure, Ionescu, & Nancu, 2013; Giri, & Kumar, 2010; Mukahi, Nakamura, & Not, 2003) there are very few numbers of research were done in the world to examine the impact of CMC on job satisfaction.

In the Sri Lankan context, research to find the direct impact of the CMC system on and job satisfaction in the service sector of Sri Lanka is still not done. So, there is a problem of whether the CMC practices can improve the job satisfaction of employees. Therefore, this research study is most important to fill up that research gap identified in the Sri Lankan context.

Ceylon Electricity Board (CEB) is a large scale organization distributed its branches to every nook of the country to supply

energy to all categories of power consumers and sale of electrical energy in islandwide. CEB also has been adopted CMC technology to the organizational communication and other related tasks for last decay. Due to the advancement of this technology, there is an increasing number of workplace activities involve computer-mediated communication (CMC) system and CMC system has changed the ways of people communicate and relationships in each other in an organization. The research question, therefore, leading directly to an empirical investigation in this study is *“Does the adaptation of computer-mediated communication (CMC) system lead job satisfaction of the employees in Ceylon Electricity Board, Sri Lanka?”*

## **2. LITERATURE REVIEW**

### **2.1 Traditional Communication to Modern Communication**

Bordi, Tammi, & Okkonen (2014) reveals that computer-mediated communication and electronic documents are mostly favored over traditional telephone calls and paper, as they seem to be easier to manage and increase the opportunity of having further control over employee's work. Before the 70<sup>th</sup> decade, some people thought using computers for information exchange as dangerous. Some people feel threatened by computers (Dahanayake, 2015). But

after 1970s, some people start to feel computers enhance their opportunities of making any information available to someone and supporting information exchange easily and speedily irrespective of geographical distances (Palme, 2000).

With the development of computer and internet technology, computer-mediated communication (CMC) appropriated all forms of communication facilities in the workplace. CMC improved vertical and horizontal information flow more efficiently across organizations as well as information intake to the organization. Not only the fastness of CMC practice but also volume and portion in the organizational work done are getting greater and greater rapidly. As a result of factors such as greater access to organizational power, decision-making and creative processes it has also been credited with significant improvement in task efficiency, planning, promoting timely and complete feedback, controlling organizational activities, managing time, initiating action plans, responding to the environment, planning flexible work schedule (Bob & Sooknanan, 2014).

## **2.2 Computer-Mediated Communication (CMC)**

Different authors have different approaches to defining computer-mediated communication.

According to Kim (2002), computer-mediated communication is defined as an interpersonal or group level communication which is mediated by a computer, but mass communication is eliminating here. December (1997) defined that “a process of human communication via computers, involving people, situated in particular contexts, engaging in processes to shape media for a variety of purposes” (p.3), while based on the definition of Stasser (1992) CMC can be defined as a process of negotiating the meaning of various situations arises between the group of social actors. As claims of Metz (1992) computer-mediated communication (CMC) is described as any communication patterns mediated through the computer.

There are lots of advantages that employees can enjoy because of the CMC systems introduced and developed in an organization. As claims of Rowley (1999), CMC makes the response more quickly than was possible through a letter or memo as well as can attach more files and communicate with groups on one occasion. So, CMC creates faster, speedier and reliable communication service. Further, he discussed the management and development of organizations considered to be centralized with CMC, and, indeed, the style of communication can influence interpersonal relationships, and in turn, factors such as commitment

and motivation. Gush (1999) researched to examine the potential and limitations of computer-mediated communication (CMC) in an educational context at Bournemouth University on two courses to serve the needs of students out on their work placement year. There he found that the CMC is its ability to facilitate learning at a distance by providing a sophisticated tool for communication. The advantage of this is, therefore it creates new knowledge and understanding while working collaboratively with a view and can deliver against desired outcomes (Bordi, Tammi, & Okkonen, 2014).

### 2.3 Dimensions of CMC

Since computer-mediated communication is rapidly developing technology its dimensions vary with time. The various researches describe CMC system with various models. According to Harold Dwight Lasswell's '5W' theory, the CMC system is a new form of communication with its own five characteristics Subject, Host, Information resource, Channel, Relations and Effects. Further, researcher Yu (2011) identifies CMC system composed of human and computers, absorbs and then extends the advantages of all former formats of communication, acceptance the instant interaction of oral communication, the intellectual logics of printing dissemination,

and the vivid images of movie and television.

The researcher Simpson, (2002) further describes that where interaction takes place in real-time synchronous CMC and where participants are not necessarily online simultaneously asynchronous CMC. Synchronous CMC includes various types of text-based online chat, computer, audio, and video conferencing; asynchronous CMC encompasses email, discussion forums, and mailing lists. Stefan (2008) has researched to explore formal and informal dimensions of CMC. In his paper, he has further developed Fish's (1990) model of distinguishes characteristics of informal and formal dimensions of computer-mediated communication (CMC). His findings revealed that a medium (Channel) may be more or less useful for supporting informal or formal communication.

According to Samarawickrama (2017), the usage of computer-related communication has grown in government institutes of Sri Lanka began in 1960. With the establishment of Sri Lanka Telecom (SLT) in 1991 and the initiation of SLT Internet service facility in 1996 adaptation to CMC is increased in public and private sector organizations. Therefore, CMC systems and its dimensions such as instant messaging, email, chat rooms, online forums, and social network services start to play a major role

in organizational communication in education, health, banking, travel & Tourism and manufacturing industries in Sri Lanka. The commonly used CMC dimensions in Ceylon Electricity Board are discussed follows according to different views of different authors to set up the hypothesis.

### **2.3.1 E-mails**

Electronic mail or e-mail is defined as the transmission of messages over communications networks. Those messages containing text, documents, sound, pictures, and even computer programs. Computers are generally used as terminals, but electronic agendas, cell phones, data communication terminals or other data exchange equipment can also be used to send emails (Beal, 2019). Currently, more than 600 million people around the world use email as a means of communication for personal and business communication needs (Mertena & Gloorb, 2009). With the development of the World Wide Web, the email also continued to develop, with providers such as Hotmail, Yahoo, and Google offered free email accounts.

E-mail possess the highest level of social presence, followed by other CMC dimensions as claims of (Tu, 2002). He reveals also email is more public in public and private sector organizations today. Quaresma, da Silva, & Marreiros, (2013) empirically

studied the use of e-mail in an organizational context, using a sample of the Portuguese population with an active e-mail account assigned by the employer. The results show that most users have what is considered appropriate behavior. The paper of Smith & Tabak, (2009) provides evidence of work outcomes of e-mail monitoring regarding employee attitudes and behaviors such as organizational commitment, job satisfaction, and performance. Not only the positive impact, but there are some drawbacks as well. Mertena & Gloorb,(2009) calculated e-mail responsiveness and conducted an individual job satisfaction survey. They identified patterns of productive and less-productive e-mail usage. Results indicate that central network position reduces e-mail responsiveness, while this position in the organization's social network also seems to be correlated with lower job satisfaction. The team which sent and received the most e-mail reported the lowest job satisfaction.

### **2.3.2 Instant Messaging**

Instant messaging (IM), is the near real-time conversation in a private, back and forth style of communication of two users by exchanging messages through a stand-alone application or embedded software (Rouse, 2008). With the development of technology now it can be transferred not only text messages but also transfer files



and images by using IM. To Larson, (2011)'s definition of Instant messaging (IM) technology is a type of online chat that offers real-time text transmission over the Internet. More advanced instant messaging can add file transfer, clickable hyperlinks, Voice over IP, or video chat. Instant messaging is gaining popularity in organizations because it speeds up the communication process. Cho, Trier, & Kim, (2005) states that IM as a double-edged sword. Because when IM help to facilitate quality communication and trust, on the other hand, it interrupts the work. However, when the negative effects if IM is negligible. However, he further states that IM can usefully increase other CMC tools and create an effective and comprehensive CMC environment in the workplace therefore it leads to better work performance of employees. Another research has done by Sias, Pedersen, Gallagher, & Kopaneva, (2012) to examine teleworkers' job satisfaction related to the use of and satisfaction with a variety of communication channels and he reveals that Teleconferencing and instant messaging ranked as least satisfying among a range of communication channels available to teleworkers.

### ***2.3.3 Computerized Maintenance Management Systems (CMMS)***

A computerized maintenance management system (CMMS) is

a software package designed to maintain a computer database for an organization's maintenance operations and human resources function (DeSanctis & Poole, 1994). Computerize Maintenance Management system (CMMS) helps schedule all types of maintenance jobs such as maintenance operations, labor handling, purchasing and inventory handling and providing statistical reports. Each responsible employee for above activities can involve for their job simultaneously if they are geographically dispersed because of CMC. CMMS is leading CMC system in Sri Lanka for utility management. A Computerized Maintenance Management System (CMMS) is a computer software program designed to assist in the planning, management and administrative functions required for effective maintenance. According to the findings of Higgins, Brautigam, & Mobley, (1995) that CMMS manage maintenance information contributes to improved communication and decision-making capabilities and improve the information and communication facilities of repair needs and work priorities. Further, they found in their research that CMMS has the capability of improving coordination through closer working relationships between maintenance and production. So it increased maintenance responsiveness of employees.

Rastegari & Mobin (2016) says that electronic communication between offices in an organization improve with CMMS because they can send work assignments to maintenance workforce through mobile devices and so they can operate more efficiently in the field, for timely completion of required maintenance and repairs. On top of that, CMMS lets your team communicate in a more efficient manner which means the work can be started faster and subsequently finished under set deadlines. To attain a better understanding of how advanced CMMS trigger satisfaction amid their resource (employees) hereby refer to Adaptive Structuration Theory (AST) to describe the process by which people incorporate advanced technologies into their work practices. Once applied, technologies should trigger a structural change in terms of productivity, efficiency, and satisfaction to individuals and organizations (DeSanctis & Poole, 1994).

#### **2.4 Employees' Job Satisfaction**

Various researchers and practitioners have provided their definitions of what job satisfaction is. However, some of the most common definitions describe job satisfaction as a psychological, behavioural and occupational response by employees' towards fulfilment at their job. It is an expression of an employee of a particular segment of the work (For instance, reward,

authority, peers). Kumar (2002) has defined the job satisfaction is a significant principle for the success of an organization where it is closely associated with life satisfaction. That means employees satisfaction is directly proportional to organizational performance. Therefore, employees can make or break an organization (Deal, 2007). Brief & Weiss (2002) defined job satisfaction as "a pleasurable or positive emotional state resulting from the perception by the individual of his/her job as implementing or allowing realizing significant values available in the work, provided that these values are consistent with his/her needs" (p.282). According to this definition that job satisfaction is the somewhat subjective person to person. Weiss, (2002) also defines the same concept of "job satisfaction represents a person's evaluation of his or her job and work context (pp. 173). Satisfaction depends on the level of discrepancy between people expect to receive and what they experience. Further Locke, (1976) defines job satisfaction as really a collection of attitudes about specific facets of the job. Employee satisfaction is equivalent to the expectations of the employee about the workplace and his attitudes towards his job. So, job satisfaction is also a moral obligation in many societies. Gradually it can conclude that job satisfaction is subjective, 'a happy worker is a productive worker.

The importance of job satisfaction for any organization is huge as it is linked to many variables, including productivity, absenteeism, turnover, etc. It is significant because a person's attitude and beliefs may affect his or her behavior (Saleem, Majeed, Aziz, & Usman, 2013). If the employees in an organization satisfied with their job it will lower turnover, higher productivity, increased customer satisfaction, employee absenteeism, helps to earn higher revenues, satisfied employees tend to handle pressure (Okwudili, 2012). Therefore if the company has satisfied employee base, that is the strength of the company. Perceived job satisfaction was measured by Epure, Ionescu, & Nancu, (2013) using six dimensions, respectively named as working conditions, promotion opportunities, frequency of training, wage and compensations schemes, employee fluctuation and importance of work within the organization in there research study. As well as according to Multi-Motivation Theory (Murasugi and Miki 1990), which was developed in Japan based on Maslow's (1954) and Herzberg's (1968) work motivation theories, that employees are motivated by four factors. They are working conditions, interpersonal relations, satisfaction with job content, and company policy.

Communication, as well, was a subject of interest to many researchers who discussed its impact on employee's job satisfaction. The results of (Jacobs, Yuo, & Chavez, January 2016) research revealed that internal communication has a significant positive effect on employee satisfaction. Based on Attar & Sweis (2010) communication are the variables that most contributed to employee satisfaction within contracting firms. Effective communication in combination with satisfied employees. The satisfied employee is mandatory for improving the firm performance in the coordination of resources. According to Epure, Ionescu, & Nancu, (2013) researched Romanian company's job satisfaction is strongly affected by communication: the more individuals communicate within companies, the more satisfied they feel with their job. Several types of research have empirically found that there was a positive relationship between effective communication and job satisfaction. According to Giri & Kumar, (2010) identifies organizational communication had a significant effect on job satisfaction and job performance of the employees. The analysis further indicated that the employees at different levels perceived job satisfaction differently. Thus, it can be seen job satisfaction and performance are very much dependent on the communication behavior of the organization.

### 3. METHODS

#### 3.1 Conceptual Framework and Hypotheses

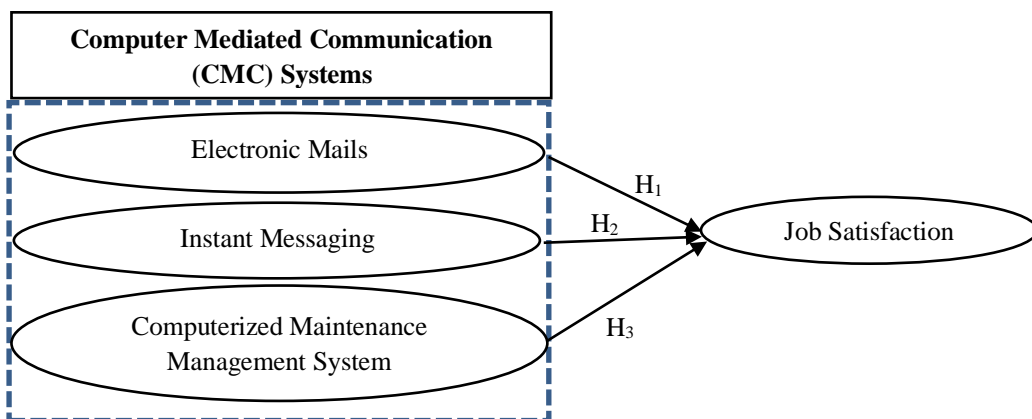
As Points out by (Balouch & Hassan, 2014) modern management science's philosophy considers job satisfaction as a baseline standard of satisfaction reported by many different characteristics of work and the workplace. There are various features of the work and the workplace that valued to job satisfaction. Researchers have attempted to explain the effects of CMC using different theories. From media richness theory Daft & Lengel, (1986) suggests that e-mail is a leaner medium due to the text-based and asynchronous nature of e-mail. The impact of communication channel satisfaction, personality, and job satisfaction could be explored from a social influence perspective (Fulk, Schmitz, and Steinfield, 1990), or a media richness perspective to better predict how each variable will influence job satisfaction of teleworking employees (Waldeck, Seibold, & Flanagan, 2004). The other study by Cameron & Webster (2005) used the media richness theory to investigate why employees use IM at work. To attain a better understanding of how advanced CMMS trigger satisfaction amid their resource (employees) hereby refer to Adaptive Structuration Theory (AST) to describe the process by which people incorporate advanced

technologies into their work practices (Gopal, Bostrom & Chin, 1993). Once applied, technologies should trigger a structural change in terms of productivity, efficiency, and satisfaction to individuals and organizations (DeSanctis & Poole, 1994). Therefore, the present study developed the conceptual framework (figure 1) to investigate the impact of email, instant messaging and CMMS in the workplace and its correlation with two core concepts of media choice theories: *media richness, social influence, and adaptive structuration theory (AST)*.

#### 3.1.1 Electronic Mails and Job satisfaction

Bob & Sooknanan, (2014) and Urquhart, Bommelje, & Schmid, (2002) found that there is a positive relationship between CMC dimension of email with job satisfaction. Based on the findings of Bob & Sooknanan, (2014), it is evident that the majority of employees felt that email usage had increased productivity and efficiency in the workplace. Mukahi, Nakamura, & Not, (2003) states that email usage is highly important for employees individually as well as for the performance of the organisation and those organizations managing CMC well. The findings of all these research show that electronic mail usage strongly affects an employee's job satisfaction. Based on the aforementioned arguments, the following hypothesis is formulated,

*H<sub>1</sub>: There is a positive impact of electronic mails on job satisfaction.*



**Figure 1: Conceptual Framework**

### **3.1.2 Instant Messaging and Job Satisfaction**

As claims of Iskandar, Arham, & Shohaime, (2017) there is a significant relationship between the uses of instant messaging with performance. Instant messaging is one of the more prominent computer-mediated communications which can boost an instant reaction, similar to face to face communication Ou, Sia, & Hui, (2013) and Cameron & Webster, (2005) described instant messaging allows employees to communicate in real-time and shows those who are online and currently available to receive messages. Lee, ( 2011) found in her research which has been conducted to understand the potential impact of using IM in the workplace, the position power of the IM jointly influence employee satisfaction and subjective task complexity. Based

on the above discussion following hypothesis is proposed.

*H<sub>2</sub>: There is a positive impact of instant messaging on job satisfaction.*

### **3.1.3 Computerized Maintenance Management System (CMMS) and Job Satisfaction**

According to the findings of Higgins, Brautigam, & Mobley, (1995) that CMMS manage maintenance information contributes to improved communication and decision-making capabilities and improve the information and communication facilities of repair needs and work priorities. Further, he found in his research that CMMS has the capability of improving coordination through closer working relationships between maintenance and production. So it increased

maintenance responsiveness of employees. Rastegari & Mobin, (2016) says that electronic communication between offices in an organization improve with CMMS because they can send work assignments to maintenance workforce through mobile devices and so they can operate more efficiently in the field, for timely completion of required maintenance and repairs. Even though prior empirical evidence on these relationships is less based upon the preceding discussion following hypothesis is proposed.

*H<sub>3</sub>: There is a positive impact of CMMS on job satisfaction.*

### **3.2 The Sample, Study Variables, Questionnaire Design and Data Collection**

Since Ceylon Electricity Board is multi-divisional organization spread over to every nook of the country, it is well recommended to do a descriptive cross-sectional research study to test the formulated hypothesis. The primary data was collected using a structured questionnaire and the secondary data was collected from previous research papers, the Internet and books. The researcher survey carried out with mixed-mode and it also included quantitative and qualitative questionnaires. Face to face interview would be helped to identify existing issues and base on that research has been created the questionnaire. The study selected executive and medium level technical service (MLTS) staff of the transmission division

of CEB as the population of the study, while executive and medium level technical staff grade employees of Western and Southern provinces are the sample in this research. Simple random sampling method was applied to select the managerial level employee in the transmission division of CEB as a unit of this analysis. Out of 200 questionnaires delivered, 50 were delivered as a web-based questionnaire and the response rate was 50% and the remaining 150 questionnaires were distributed personally. However, 75 questionnaires were usable to the survey after the personal distribution as there were six incomplete questionnaires, while response rate was 54%. As such, the total of 100 usable questionnaires was considered for the analysis with a 53% overall response rate. A structured questionnaire used in the study consisted of three parts including the first part for the demographic data of the respondents, the second part to elaborate the background information of the respondents, and the third part relates to the hypothesis of the study.

The four study constructs of the study i.e., electronic mails, instant messaging (IM), computerized maintenance management system (CMMS) and job satisfaction were operationalized as multi-item constructs. The seven items of the electronic mails were adopted from Bälter (1998); Iskandar,

Arham, & Shohaime, (2017); and Quaresma, Da Silva & Marreiros (2013). Instant messaging consisted of seven items were adopted from Mahatanankoon (2010); Mukahi, Nakamura, & Not (2003); Lee, (2011); and Iskandar, Arham, & Shohaime, (2017), while computerized maintenance management system (CMMS) consisted of seven items adapted from Mukahi, Nakamura & Not,(2003); and Chauhan & Singh (2016). Job satisfaction consisted of 11 items adapted from Mukahi, Nakamura, & Not (2003).

**4. RESULTS**

Structural equation modelling (SEM) was used in this study to assess the predictive power of the theoretical model and testing the formulated hypothesis. Internal consistencies of the constructs were examined using the composite reliability index. Discriminant validity indicates the extent to which a given construct is different from other latent constructs. Fornel and Larcker (1981) have suggested using the average variance extracted (AVE) in evaluating the discriminant validity of constructs. Partial least square technique using Smart PLS version 20 was used to test the hypotheses, while SPSS software package was used to check frequency statistics of the demographic variable.

**Table 1: Discriminant Validity of the Latent Variables**

	1	2	3	4
<b>Electronic mails</b>	<b>0.865</b>			
<b>Instant Messaging</b>	0.209	<b>0.873</b>		
<b>CMMS</b>	0.438	0.007	<b>0.913</b>	
<b>Job satisfaction</b>	0.587	0.232	0.619	<b>0.912</b>

Source: Survey Data (2021)

Discriminate validity is the degree to which any single construct is different from the other constructs in the model (Carmines & Zeller, 1979) and it is assessed by the test provide by Fornell and Larcker (1981) in which the pair-wise latent variable correlations between factors obtained are compared with the square root of the average variance extracted estimates for the constructs making up each possible pair as illustrates in table 1.

**4.1. PLS Path Model Estimation**

In Partial Least Squares (PLS) method, structural model and hypothesis were tested by computing path coefficients ( $\beta$ ). Because PLS does not require a normally distributed data it is evaluated with R-squared calculation for dependent latent variables (Cohen, 1988) and the average Variance extracted (Fornell & Larchner, 1981) as

shown in Table 2.

**Table 2: Results of PLS Path Model Estimation**

	Job Satisfaction <sup>a</sup>
	Estimates (t-Value)
Path	
Electronic mails	0.35 (4.68***)
Instant Messages	0.16 (2.07**)
Computerized Maintenance Management Systems (CMMS)	0.46 (6.91***)
Coefficient of Determination (R <sup>2</sup> )	
Electronic mails	0.35
Instant Messages	0.15
Computerized Maintenance Management Systems (CMMS)	0.46
F <sup>2</sup> Coefficient	
Electronic mails	0.20
Instant Messages	0.05
Computerized Maintenance Management Systems (CMMS)	0.37
Q <sup>2</sup>	0.234

\*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$

<sup>a</sup>Dependent variable

According to the results indicates in table 2, it reveals that electronic mails has a positive and statistically significant relationship with employees' job satisfaction ( $\beta = 0.35$ ,  $t = 4.68$ ,  $p < 0.001$ ) and there is a positive relationship between instant messaging and employees' job satisfaction ( $\beta = 0.16$ ,  $t = 2.07$ ,  $p$

$< 0.01$ ). The results indicate that the relationship is in the expected direction and the relationship is statistically significant. The relationship between CMMS and employees' job satisfaction ( $\beta = 0.46$ ,  $t = 6.91$ ,  $p < 0.001$ ) is also positive and statistically significant.

**Table 3: Confirmatory Factor Analysis of Constructs**

Item	Standardized Factor Loadings (t- Value)	Composite Reliability /AVE
Electronic Mails		<b>0.865/0682</b>
The replies to my email messages are immediate and within satisfied speed	0.822 (22.56)	
It is easy to express what I want to communicate through emails	0.786 (14.57)	
Since email communication is mostly	0.866 (33.02)	



used in my work place it is easy to work		
Instant Messages		<b>0.873/0.762</b>
The approvals and decision making more quick because of instant messaging	0.866 (5.16)	
The communication within the work place has increased because of instant messaging	0.879 (6.77)	
Computerized Maintenance Management System		<b>0.913/0.677</b>
The speed of procurement, attending maintenance work has increased after introducing CMMS	0.829 (25.38)	
There is a user friendly interface in CMMS therefore I am satisfied work with CMMS	0.874 (27.98)	
Functioning and accessibility of the system is always in good condition as I expect	0.814 (17.33)	
CMMS facilitates improved communication between my maintenance team	0.782 (22.07)	
The present CMMS system easier since data and information are easily saved and can be accessed again when needed	0.810 (17.76)	
Job Satisfaction		<b>0.912/0.512</b>
My workplace is well-equipped with up-to-date equipment such as physical facilities available for CMC (email, viber, what's up, web base applications, etc)	0.703 (8.71)	
There is no tension at my workplace, because CMC systems increased organizational commitment and reduced work stress	0.824 (25.69)	
The availability of CMC helps to develop relationships, so there is improvement in teamwork at my workplace with CMC	0.693 (11.68)	
I can deliver maximum output in par with my ability using CMC in my present work	0.741 (14.44)	
The company policy on CMC system matches with my interests and expectations	0.756 (15.89)	
I recommend CMC system for other government and private organizations	0.6 (7.29)	

I am pleased to work with CMC it has less paper work and can store files electronically	0.632 (6.59)	
Since I am provided an adequate training on the CMC systems I am happy to work with CMC	0.688 (10.67)	
I am happy to work with CMC because it delivers the service what I expected	0.797 (17.58)	
I feel more committed to the organization because CMC System allows us to be better informed and increases information sharing	0.707 (11.67)	

Source: Survey Data (2021)

Confirmatory factor analysis is carrying out on the data to verify the reliability of each measurement scale of variables (Forza, 2002). Standardized factor loadings and outer loading factors of each item and the composite reliability and AVE value of each construct is presented in table 3. According to the provided guidelines of Bagozzi, Yi, & Phillips, (1991) the composite reliability of various dimensions is higher than 0.7 and Average Variance Extracted (AVE) is higher than 0.5 is accepted as significant levels. According to Hair, Black, Babin, & Anderson, (2007) generally larger loadings are the stronger and more reliable the measurement model. The factor loadings of the latent variables are high and statistically significant. According to the results of CFA, this confirms that the indicator variables and their respective underlying constructs are acceptable. The composite reliability values of the study constructs also reveal that the measurement model is reliable.

## 5. DISCUSSION

The main aim of this research is to examine how computer-mediated communication (CMC) systems such as e-mails, IMs, CMMS impact on job satisfaction of employees in Ceylon Electricity Board. The results of the study confirmed a positive and significant impact of electronic mails on the job satisfaction of employees. This finding is in line with the findings of Bob & Sooknanan, (2014); and Urquhart, Bommelje, & Schmid, (2002). Moreover, based on the findings of Bob & Sooknanan, (2014), it is evident that the majority of employees felt that email usage had increased productivity and efficiency in the workplace. Based on Mukahi, Nakamura, & Not, (2003) email usage is highly important for employees as well as for the performance of the organization. Further, he says that those organizations managing CMC well can gain CMC effects such as increase employee job satisfaction. Also, the result of the study reveals that positive and

significant impact is found between instant messaging (IM) and job satisfaction. Many of the studies (Chang & Wan-Zheng, 2014) suggest that IM impact to the employees' job satisfaction. Further, they suggest that the management team of an organization should try to construct a new organizational culture of using IM for communication and problem-solving. Also as a support for these findings, Mahatanankoon, (2010) expresses that instant messaging leads to creativity and influence to increase job satisfaction. As claims of Iskandar, Arham, & Shohaime, (2017) there is a significant relationship between the uses of instant messaging with performance. Instant messaging is one of the more prominent computer-mediated communications which can boost an instant reaction, similar to face to face communication. Ou, Sia, & Hui, (2013) and Cameron & Webster, (2005) described instant messaging allows employees to communicate in real-time and shows those who are online and currently available to receive messages.

According to the findings of the research two dimensions of electronic mails and CMMS have a positive significant impact on job satisfaction. Since CMMS is implemented only in the Transmission division of CEB, these findings will help higher management to step forward for CMMS implementation in other

divisions of the CEB also. As well as these results show that investing in CMMS implementation in the organization is worth it. Therefore managers can pay more attention to developing facilities for electronic mailing and CMMS without any hesitation. Rastegari & Mobin, (2016) says that electronic communication between offices in an organization improve with CMMS because they can send work assignments to maintenance workforce through mobile devices and so they can operate more efficiently in the field, for timely completion of required maintenance and repairs. So these findings help managers to decide whether they can extend their communications tools of CMMS to increase job satisfaction more.

### **5.1 Managerial Implications**

Quaresma, da Silva, & Marreiros, (2013) empirically studied the use of e-mail in an organizational context, using a sample of the Portuguese population with an active e-mail account assigned by the employer. The results show that most users have what is considered appropriate behavior and show a positive significant impact on job satisfaction. Therefore it consists of previous studies this study also positively related to empirical study. Therefore according to these findings, the managers should consider solutions for enabling better management of e-mail by its employees by paying more attention to email security. The

responding speed, easiness of expressing ideas and work easiness in electronic mails are more important in achieving a higher level of job satisfaction. As well as the managers can understand by these findings there the user-friendly interface, good access condition, save and re-access data and making good communication among the team in CMMS are more important in achieving a higher level of job satisfaction.

On the other hand, the results show that there is a positive and significant impact of instant messaging on job satisfaction. Therefore managers should have to pay their more and more attention to improve instant messaging as one of the communication media in an organization. Some IM applications can use push technology to provide real-time text, which transmits messages character by character, as they are composed. More advanced instant messaging can add file transfer, clickable hyperlinks, Voice over IP, or video chat (Lee, 2011). Therefore such findings imply managerial efforts should be paid to facilitate the good IM application than present to improve the employee's job satisfaction. Cho, Trier, & Kim, (2005) identified that IM as a double-edged sword. That means IM usage has both positive and negative impacts on employees job satisfaction and performance. Therefore managers have a huge responsibility to identify these

negative impacts and get decisions to eliminate them. However, Cho, Trier, & Kim, (2005) further states that IM can usefully increase other CMC tools and create an effective and comprehensive CMC environment in the workplace, therefore, it leads to better work performance of employees. So academics can do further study to find a way to use IM more effectively and comprehensively in the workplace in future.

On the other hand, the study conducted by Iskandar, Arham, & Shohaim, (2017) one of the public service departments in Malaysia with 132 respondents found that there is a significant relationship between the use of instant messaging and social network with performance. Instant messaging is one of the more prominent computer-mediated communications which can boost an instant reaction, similar to face to face communication. Ou, Sia, & Hui, (2013) and Cameron & Webster, (2005) described instant messaging allows employees to communicate in real-time and shows those who are online and currently available to receive messages. Therefore there should be a proper mechanism to increase instant messaging usage effectively in the public sector in Sri Lanka somewhat advance than the present.

## **5.2 Limitations and Future Research**

Executive grade engineers and medium level technical service

grade employees at transmission division were the key respondents in this study. However, the other employee categories and other divisions of the CEB could have a different response to the study. The sample size was limited to 100 respondents and this too could hinder the generalization of the findings. In this research considered only three CMC dimensions which influence job satisfaction. But there are more CMC dimensions used as organizational communication present. In this study, I selected a reputed leading company in the public sector. But the employees in another public sector organization or private sector organization could have responded differently. Therefore it is important to consider more CMC dimensions in private sector organizations as well in future studies. In this study, only examined the positive effects of CMC in the workplace. Future research on comparing the advantages and disadvantages of using these CMC and addressing their impacts on individual performance can enhance the entire study. The research was limited to the internal organizational communication of CMC. In future studies, it can be considered external organizational communication in CMC with customer satisfaction or it can study how CMC system impact on the revenue collection of the organization.

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## **Microfinance Services and Performance of Micro Entrepreneurs: A Study of Pilimathalawa Area**

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### **Abstract**

Microfinance has evolved as an economic development approach and intended to benefit low-income women and men. The term refers to the provision of financial services to low-income clients, including the self-employed. Financial services generally include savings and credit; however, some microfinance organizations also provide insurance and payment services. This study examines the influence of microfinance services on the performance of micro entrepreneurs in Pilimathalawa area. 100 micro entrepreneurs who received the benefits from the Samurdhi Bank were selected as sample in this study purpose. The microfinance services – micro-credit, micro-savings, and micro-training were considered as independent variables and the entrepreneurs' performance was considered as dependent variables of the study. Data were collected through issuing structured questionnaire to the respondents and analyzed using SPSS version 20. The Correlation analysis, Regression analysis and factor analysis were done to influence of financial services on performance of micro entrepreneurs. The results of the present study indicated that the microfinance services had the significant positive relationship with the entrepreneurs' performance and the microfinance services – micro-credit, micro-saving, and micro-finance have highly impact on the performance of entrepreneurs. Finally, the microfinance services – credits, saving, and training - had highly effect on the performance of the micro entrepreneurs. Further, the study revealed that the micro-savings has most important to the micro entrepreneurs in the Pilimathalawa area in Sri Lanka

**Keywords:-** Micro Entrepreneurs, Microfinance Services, Performance

## 1. INTRODUCTION

Microfinance has evolved as an economic development approach to intend to benefit low-income women and men. The term refers to the provision of financial services to low-income clients, including the self-employed. Financial services generally include savings and credit. However, some microfinance organizations also provide insurance and payment services. In addition to the financial intermediation, many MFIs provide social intermediation services such as group formation, development of self-confidence, and training in financial literacy and management capabilities among members of a group. (Microfinance Handbook, Joanna Ledgerwood). MFIs can be nongovernmental organizations (NGOs), savings and loan cooperatives, credit unions, government banks, commercial banks, or nonbank financial institutions. Microfinance clients are typically self-employed, low-income entrepreneurs in both urban and rural areas. (Microfinance Handbook, Joanna Ledgerwood). Microfinance has gained recognition as a means of facilitating sustainable economic development in poor countries, and has become a buzzword in international donor circles (Senanayake & Premaratne, 2005). Hence, it has opened the avenues for obtaining international financial capital (Khavul, 2010).

Entrepreneurs are very crucial to the development of a country's economy, especially countries like Sri Lanka. Services of Microfinance Institutions encompass financial services such as provision of loans, offering facilities for savings, insurance policies and payments services among many others, as well as social intermediation services such as group formation, development of self-confidence, and training in financial literacy and management capabilities among members of a group. These services are offered to lower income clients including self-employed entrepreneurs with the object of supporting for their performance

Today the area wise institutions provide microfinance in Sri Lanka, such as state banks, Regional Development Banks and other licensed specialized banks, Co-operative rural banks and other co-operatives, Thrift and credit cooperative societies (TCCSs/Sanasa Societies), Samurdhi Bank Society, NGO-MFIs and Other financial (Micro finance industry report, 2009). The research question of the present study is; how do the microfinance services influence the performance of the micro entrepreneurs?

Most of the small scale entrepreneurs in Pilimathalawa area are attached with the

microfinance organizations to get microfinance services, and their performance also may vary from entrepreneur to entrepreneur. Therefore present study investigates the influence of microfinance services in entrepreneurs' performance. Hence the objectives of the present study are to;

- Measure the relationship between services of microfinance institutions and entrepreneurs' performance.
- Measure the impact of microfinance services on the performance of the micro entrepreneurs.
- Rank the most important factor of microfinance services providing by the Samurdhi Bank.

## 2. LITERATURE REVIEW

Today there are varieties of institutions provide microfinance in Sri Lanka, such as state banks, Regional Development Banks and other licensed specialized banks, Co-operative rural banks and other co-operatives, Thrift and credit cooperative societies (TCCSs/Sanasa societies), Samurdhi bank society, NGO-MFIs and Other financial institutions (this category includes commercial banks, registered finance companies & etc. which offer some microfinance services.) (Micro finance industry report, 2009)

An entrepreneur is someone who develops a business model, acquires the necessary physical

and human capital to start a new venture, and operationalizes it and is responsible for its success or failure. Entrepreneurs play a major role in Sri Lanka's economic development. But entrepreneurs in Sri Lanka are facing greater challenge in the modern business environment under tough competition, rapidly changing new technologies, globalization of products and services and investment issues.

The microfinance banks services have significantly improved the performance of women-owned enterprises in Benue State, Nigeria. The study concludes that microfinance banks loan services and saving services have more significant effect on the performance of women-owned enterprises. The study also concludes that training services offered by microfinance banks have significantly improved the skills and experiences of women which are transferred to their enterprises (Diaka & Asenge 2019). Haider *et. al.*, (2018) highlighted training of microfinance beneficiaries is vital for getting better performance. The results indicated that the growth rate of Micro and Small enterprises whose owners had been trained were better as compared to those Micro and small enterprises whose owners had never been given training.

Kingsley Bernard *et. al.* (2017) discussed the influence of microfinance services on

entrepreneurial success of women in Sri Lanka. Micro-credit, micro-savings, and micro-insurance were considered as an independent variables and entrepreneurial success of women was considered as dependent variables of this study. Further the study found that the positive relationship among micro-credit, and micro-savings and entrepreneurial success of women and the negative relationship between micro-insurance and entrepreneurial success. Khin *et.al.* (2017) found that the significant microfinance service factors influencing on entrepreneurial success of women entrepreneurs utilizing such services in Sri Lanka.

Herath *et. al.* (2015) found that the impact of microfinance on poverty and vulnerability of women borrowers. The finding of this study identified that four criteria – access, creation and control over private resources, freedom of decision making at home, self-confidence on socio – economic activities and status in community and family were positively affected the women. A qualitative study expressed that the influence of microfinance services (micro-credit, micro-savings, micro-insurance, Business support, skills development) on entrepreneurial success of poor women. Further the study discussed weaknesses of such services in the process of women achieving entrepreneurial success (Kingsley Bernard 2015).

In Sri Lanka the small entrepreneurs of rural area are an important unit contributing to the economic growth of the country and microfinance programs were directly relate new small entrepreneurs in the main sectors of agriculture, manufacturing and service sectors. As microfinance service micro-credit is an important tool for some households which already engaged in entrepreneurship and it allows expansion of the household business for those with high returns. As well as social mobilization and training activities played important roles bringing about community involvement and people empowerment. (Prasansha Kumari, 2014)

The changes in the performance of small and medium enterprises experienced after contracting micro-loans and other services were increased brand awareness as the highest area of performance change, followed by an increase in productivity, increased facilities for operations and an increased customer base. And also Changes experienced by the entrepreneurs as individuals after contracting micro-loans and other services was indicated as an increase in management skills, followed by becoming a role model and an increase in personal income. The provision of a micro-loan by micro-finance institutions was rated as the highest factor that positively contributed to the performance of

small and medium enterprises, followed by the general performance of the economy and consulting services. Finally Provision of micro-loans by micro-finance institutions was rated as the factor that positively contributed to the performance of small and medium enterprises (Kinimi 2014)

The research study of Kithae (2013) derived microfinance factors named; credit, savings, social capital, opportunity and attitude to risk are all positively related to women entrepreneurs' performance in Kenya. As well as opportunity for entrepreneurial activity mediates the relationship between credit, savings, training and social capital and women entrepreneurs' performance and attitude to risk moderates the relationship between above four variables and women entrepreneurs' performance. And both opportunity and attitude to risk are positively related with the women entrepreneurs' performance. Further, Osunde (2012) and Ojo Olu (2009) shows that the microfinance institutions are evident tools for entrepreneurship development due to the various services they offer and the role they perform towards the development of the economy.

Entrepreneur orientation was depending on owner /managers innovativeness. Those owners /mangers that possess creative ability, adequate technical skills

and industry experience were supported to be innovative. Availability of financial capital was important to introduce new innovations, capture efficient technology and expand domestic and export market. Most small and medium enterprises in Hambanthota district were lacking awareness of alternative source of finance. Therefore, this study highlighted, government and non-government sector to focus on promoting the level of entrepreneur's orientation performance by directing research and development activities, providing financial resources, training package and consulting services Fairoz *et. al.*, (2010).

Even though many of the foreign and Sri Lankan researchers conducted the research regarding impact of micro finance in entrepreneurial development and women entrepreneurs' performance and also there were a few numbers of researchers discussed that the effects of microfinance factors on entrepreneurs' performance in Sri Lanka. These studies also based on the entrepreneurs' performance. Therefore, researchers have identified this as the research gap and going to carefully investigate the effect of microfinance in entrepreneurs' performance.

Microfinance generally refers to the provision of basic financial services such as loans, saving



accounts and insurances for low-income people but economically active people. In most instances the term microfinance refers to the provision of small loans (micro credits) for micro-entrepreneurs.

Three microfinance services were taken to this study purpose such as microcredit, micro-savings, and micro-training. These are considered as independent variables and perceived performance was considered as dependent variable in the present study.

Based on the above literature survey, following hypotheses were derived in this study.

H<sub>1</sub>: There is a relationship between Microfinance services and entrepreneurs' performance.

H<sub>2</sub>: Microfinance services have higher impact on the entrepreneurs' performance

### 3. METHODOLOGY

#### 3.1. Sample of the Study

The target participants for this study were micro entrepreneurs (owners of micro enterprises). The micro entrepreneurs were selected from those who received microfinance services from Samurdhi Bank in Pilimathalawa area. In total, hundred (100) entrepreneurs who made use of micro finance services from selected Samurdhi Bank institution. Simple random sampling technique was used to

select from the target population in Samurdhi beneficiaries in Pilimathalawa area.

#### 3.2. Data Collection

For this study purpose, closed-ended questionnaires were prepared to collect the primary data. The final questionnaire consisted of three sections as A, B, and C. The section A consists of demographic profile of the respondents like gender, age, education level, marital status, and experience in business and business type. The section B consists of functioning of microfinance institutions and section C consists of the microfinance services and entrepreneurs' performance related information. The questionnaire issued to micro entrepreneurs and 100 entrepreneurs perfectly filled and returned the questionnaires to the researchers.

#### 3.3. Data Analysis

The collected data were entered and analyzed using SPSS version 20. Correlation analysis - This technique is used to find out the relationship among the variables, Multiple Regression analysis - It generally explains the relationship between multiple independent variables and one dependent variable. It is a statistical tool used to determine the probable change in one variable for the given amount of another variable and factor

analysis were done for ranking the microfinance services to the micro entrepreneurs. Reliability and validity of the data were examined in this study for measuring the adequacy of the data.

#### 4. RESULTS AND DISCUSSIONS

##### 4.1. Reliability Test

Before analysing the variables in detail and testing the hypothesis, a reliability test was done by the researchers to examine whether the data available is fit for analysis or not. Reliability test is of paramount importance, since it identifies whether the questionnaire and the data collected through distributing the questionnaires are reliable. Therefore, to fulfil the requirement of the reliability in this study, the Cronbach's alpha model was used to test the reliability of the variables used in the study. The Cronbach's Alpha value of the variables is 0.977. It indicates that the instrument developed in the research had been designed with a higher level of reliability and internal consistency. The results of the study were illustrated in the Table 1.

Cronbach's Alpha	No of Items
.977	20
Source: Survey data	

##### 4.2. Validity Test

For this study purpose, the KMO-Bartlett Sphericity Test (Kaiser – Meyer - Olkin and Bartlett's Test of Sphericity) was examined to test the validity of the research and the research instrument.

The KMO (Kaiser – Meyer – Olkin) measures the sampling validity. The value of Kaiser – Meyer – Olkin measure of sampling adequacy should be greater than 0.5 for a satisfactory level. The measure can be interpreted as meritorious if it carries a value of 0.80 or above. Higher the value indicates higher the validity of the research instrument. The score of KMO - Bartlett is 0.841, which is in the range of “Meritorious” and supports this study in terms of validity. Moreover, according to the Bartlett's Test of Sphericity the P value is 0.000, which is also good enough to reject the null hypothesis and accept the alternative hypothesis since the P value should be 0.05 as per the rule of thumb. The results were illustrated in the Table 2.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.841
Bartlett's Test of Sphericity	Approx. Chi-Square	2718.105
	df	91
	Sig.	.000
Source: Survey Data		

### 4.3. Testing of Hypotheses

#### Relationship between Microfinance services and entrepreneurs' performance

For testing the H<sub>1</sub>: There is a significant relationship between Microfinance services and entrepreneurs' performance the researchers done the correlation analysis. The correlation between microfinance credit service and entrepreneurs' performance is 0.870 and the significant value (p value) is 0.000 under 0.01 significant levels. According to the correlation value microfinance credit and entrepreneurs' performance are positively correlated. The correlation between micro-savings service and entrepreneurs' performance is 0.696 and the significant value (p value) is 0.000 under 0.01 significant levels. Hence the results observed that the positive relationship between Microfinance savings and entrepreneurs' performance has positive relationship in this study. The correlation between microfinance training service and entrepreneurs' performance is 0.709. And the significant value (p value) is 0.000. Therefore, the correlation value microfinance training and entrepreneurs' performance are positively correlated. The results of the study are illustrated in the Table 3.

Variable	E-performance	Sig.(2-tailed)
M-credit	0.870**	0.000
M-saving	0.696**	0.000
M-training	0.709**	0.000
Note: ** represents correlation is significant at level 1%		
Source: Survey data		

Finally, the study found that the relationship between microfinance services and entrepreneurs' performance has a significant positive relationship. Hence the hypothesis 1- There is a significant relationship between Microfinance services and entrepreneurs' performance is supported.

#### Impact of Microfinance services on the Performance of Entrepreneurs.

For testing the Hypothesis 2, the Microfinance services have higher impact on the entrepreneurs' performance e regression analysis was done in this study. The results are illustrated in the Table 4, and Table 5.

**Table 4: Results of model fit**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Sig-value
1	0.902	0.813	0.807	0.000

Source: Survey Data

The results from Table 4 shows that coefficient of determination (R-square) explains the variation

in the dependent variable due to changes in the independent variable. The R-square value of 0.813 is an indication that there was variation of 81.3% in performance of entrepreneurs. Due to the changes in microfinance credit service, microfinance savings service and microfinance training service of 95% confidence interval. Also the value of R (0.902) indicated that there was strong relationship between variables. As well as statistics in table 5 indicates, that which is the population's

parameter had a significance level of 0.000 which shows that the data is ideal for making conclusion in the population's parameter as the value of significance (P-value) is less than 1%. This implies that microfinance credit service, microfinance saving service and microfinance training service significantly affect the performance of entrepreneurs in Pilimathalwa area.

<b>Table 5: Estimated results of multiple Regression</b>				
<b>Variables</b>	<b>Unstandardized coefficients</b>	<b>Std.Error</b>	<b>Standardized coefficients</b>	<b>Sig.value</b>
Constant	0.751	0.152		0.000
M-credit***	0.548	0.067	0.579	0.000
M-saving***	0.166	0.055	0.183	0.003
M-training***	0.213	0.048	0.256	0.000
Note: *** represents 1% level of significant				
Source: Survey Data				

In the above table, Firstly, regression coefficient for microfinance credit service is 0.548, which implies that, the respondent who have strongly agreed and more satisfied with the micro-credit service given the microfinance institutions, their performance also will be higher.

In other words, the entrepreneurs have better micro credit services, their performance also higher. Based on the study P-value for microfinance credit service 0.000

is less than 0.01 which is an indication that variable has a positive significant effect on the performance of entrepreneurs.

Secondly, the regression coefficient for microfinance saving service is 0.166, which implies that, the respondent who has strongly agreed and more satisfied with the micro-saving service given by the microfinance institutions, their performance also will be higher. Based on the study P-value for microfinance savings service 0.003 is less than

0.01 which is an indication that variable has a positive significant effect on the performance of entrepreneurs.

Finally, microfinance training service is 0.213, which implies that, the respondent who has strongly agreed and more satisfied with the micro-training service given by the microfinance institutions, their performance also will be higher. In other words, as the entrepreneurs have better micro-training services in their performance. According to the study P-value for microfinance training service 0.000 is less than 0.01 which is an indication that variable has a positive significant effect on the performance of entrepreneurs.

Based on the regression results the hypothesis 2 is supported in this study. Hence these three services highly impact on the performance of the entrepreneurs in Pilimathalawa area.

For ranking the microfinance services, an exploratory factor analysis with Varimax rotation was measured. 14 items of the microfinance services, and three components with eigen value greater than 1.00 were extracted with the total variance 88.86%. The rotated factor matrix is illustrated in the Table 6. The Table 6 shows the variables used for the study purpose which is explained below.

**Table 6: Factor loadings and Community Estimates**

Item	F1	F2	F3	h <sup>2</sup>
TQ1	0.975			0.629
TQ2	0.963			0.786
TQ3	0.969			0.720
TQ4	0.958			0.780
TQ5	0.976			0.749
SQ1		0.951		0.972
SQ2		0.951		0.973
SQ3		0.956		0.987
SQ4		0.956		0.959
CQ1			0.788	0.992
CQ2			0.881	0.967
CQ3			0.820	0.983
CQ4			0.860	0.957
CQ5			0.851	0.990
Eigen	6.67	3.37	2.40	
Variance	47.63	24.07	17.16	
Com.Var	47.63	71.69	88.86	

Source: Survey data, h<sup>2</sup>=  
Community Estimates

The Three factors grouping can be used to represent the data. The factors are micro-training, micro-savings, and micro-credit.

**Factor I: Micro-training factor**

Factor I explains 47.63 percent of total variance. This includes TQ1, TQ2, TQ3, TQ4 and TQ5. This factor has also significant factor loadings on these variables which are formed this major cluster. So this factor has provided a basis for conceptualization of dimension which can be called as “Micro training factor.”

**Factor II: Micro-Savings factor**

Factor II explains 24.07 percent of total variance. This includes SQ1, SQ2, SQ3, and SQ4. This factor has also significant factor loading on these variables which formed second important cluster with respect to the variation. So this factor provided a basis for conceptualization of dimension which can be called as “Micro saving factor.”

**Factor III: Micro-credit factor**

Factor III explains 17.16 percent of total variance. This includes CQ1, CQ2, CQ3, CQ4 and CQ5. This factor has also significant factor loading on these variables which formed third important cluster with respect to the variation. So this factor provides a basis for conceptualization of dimension which can be called as “Micro credit factor.”

Risk of repayment of loan (SQ2), Cover the expenditure of the business (SQ3) and Smooth irregular income (SQ4). This has reflected own savings of the entrepreneurs were best asset for the entrepreneurs. Therefore it was highly significant than the other factors.

The second most important factor is Micro-training. This factor includes Knowledge of financial literacy (TQ1), Management skills (TQ2), Operational skills (TQ3), Technological skills (TQ4) and Knowledge of leadership (TQ5). These factors have been found working as improve the business knowledge of the entrepreneur.

Micro-credit factor includes Physical assets of the business (CQ 1, Machines/ tools/ equipment), Operational facility (CQ2), Number of products (CQ3), Number of buyers (CQ4) and Business volume (CQ5) and it was third significant factor.

Based on the results, cumulative variance of three factors is 88.8%. It observed that the micro-saving has higher significant factor for micro entrepreneurs in Pilimathalawa area in Sri Lanka.

**Table 7: Factor wise average score**

Serial No:	Factor	Factor score	Rank
I	Micro-training	0.209	2
II	Micro-saving	0.261	1
III	Micro-credit	0.204	3

Source: Survey data

Based on the factor wise average score in table 7, the results indicated that factor II: Micro-saving is the most significant issue that impedes the entrepreneurs’ performance in Pilimathalawa area. This factor includes provide capital necessary to invest (SQ1),

**5. FINDINGS**

The multiple regressions and correlation analysis were done in this study for measuring the relationship between independent and dependent variable. The results indicated that the positive

relationship between micro-credit service and entrepreneurs' performance was observed and the micro-credits have significantly influence on the entrepreneurs' performance. The micro-saving have positively correlated and significantly influence on the entrepreneurs' performance and the micro-trainings also have positively influence on the entrepreneurs' performance of this study. The results were supported with the prior researchers (Khin *et al.* 2017, Syed Hussain Haider *et.al* 2018, and Kingsley Bernard *et al* 2018).

Finally the factor analysis was done in this for finding the most important factor of microfinance services on the entrepreneurs' performance. The results found that micro-savings has most important factor of microfinance services factor. Respondents have shown savings are performed as an asset and helped in increase entrepreneurs' performance without any other interventions than the other two services. The result was supported with the research done by Prasansha Kumari (2014). Further the study identified that the derived hypotheses were accepted. Finally the study found that the microfinance services highly significant to the micro entrepreneurs in Pilimathalawa Area in Sri Lanka.

## 6. CONCLUSION

This study critically examined effect of microfinance services on entrepreneurs' performance in Pilimathalawa area, who are utilizing microfinance services from the microfinance institutions. Microfinance is the widely used throughout the Sri Lanka for many decades as tool to develop the entrepreneurs. This study carried out by collecting data from 100 beneficiaries who have obtained microfinance facilities from the selected institution (Samurdhi Bank) in Pilimathalawa area. Researchers employed correlation, multiple regression and factor analysis to examine and present the collected information.

Findings of the study showed that microfinance services have significantly impact on the performance of micro entrepreneurs in Pilimathalawa area. The study concludes that microfinance credit service and saving service have more significant effect on the performance of entrepreneurs. The study also concludes that training service offered by micro finance institutions have significantly improve the skills and knowledge of entrepreneurs which transferred to their business purposes. And also the results of factor analysis found that micro-savings service ranking in the microfinance factor which mostly effect on the entrepreneurs' performance. Respondents have shown savings are performed as an asset and

helped in increase entrepreneurs' performance without any other interventions than the other two services.

## 7. RECOMMENDATIONS

Recommendations are absolutely paramount in any research. In this research, based on the analysis of role of microfinance services in entrepreneurs' performance, the following recommendations are made. The following recommendations would be forwarded for research study based on the findings of this research study for further development of their practices.

- Knowledge and information should provide to beneficiaries regarding how to use the micro-credit, micro-savings and micro-training services effectively for achieving their objectives and should help to progress their business.
- Normally microfinance institution deal with low income people. However rich people should attract for microfinance only for serving credit facilities. But micro finance institutions can accept their savings and also can provide training and other financial services also.
- The microfinance institutions need to conduct a training assessment in order to establish what kind of training

is suitable for entrepreneurs. They should train them on proper finance and business management practices to professionally manage their businesses.

- Microfinance institutions should train micro entrepreneurs on proper business practices to avoid business failures.
- There should have a regulatory framework for supervising and monitoring micro financial institution and provide better service for their beneficiaries.

## 8. DIRECTIONS FOR FURTHER STUDIES

This research provides direction for further research. Here, the researchers have considered about the micro entrepreneurs who are utilizing microfinance services from Samurdhi Bank. Because in Pilimathalwa area Samurdhi Bank was only micro finance institution which provides all three micro-credit service, micro-savings service and micro-training service for their beneficiaries. But in future, any researcher who is interested in the field can undertake a research regarding any other one or more micro finance institutions also. In addition, this study focused on particular area, but in the future this study can be carried out in District wise, Province wise and Island wise. In this study the researchers was selected only 100 entrepreneurs



among the number of entrepreneurs who were utilized micro finance services from Samurdhi Bank. In future, this study can be carried out with large number of entrepreneurs and as well large number of sample.

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## **Does Board Characteristics Affects Corporate Financial Leverage? Evidence from Non-Financial Companies Listed in Colombo Stock Exchange**

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### **Abstract**

With the recent developments in the discipline of corporate governance, concern for the Board of Directors has increased significantly. Even though there are a number of extensive researches in the field, the understanding of the board and its impacts on corporate Financial Leverage is still limited. This research investigated the linkage between some corporate governance characteristics and corporate Financial Leverage in an emerging market, Sri Lanka. The researchers have used a sample of 100 non – financial highly market capitalized firms selected from the most active trading listed Companies in Colombo Stock Exchange (CSE) covering the period from 2011 to 2019 with 900 observations. The Fixed effect multiple regression models (OLS) have used to analyze the data. Results show that proportionate of board non-executive directors and independent directors positively significantly affect the corporate financial leverage and CEO Duality and Board tenure have negatively significantly affected the corporate financial leverage.

**Keywords:-** Corporate Governance, Corporate Financial Leverage, Colombo Stock Exchange

### **1. INTRODUCTION**

This research investigates the linkage between board characteristics and corporate financial leverage of non-financial listed companies in the Colombo Stock Exchange (CSE). After some financial corporate scandals, lots of strategies and methods are taken into the field of corporate governance in order

to build up effective governance mechanisms. With the significant developments in the discipline of corporate governance, concern for the board of directors has increased significantly. Financial related activities usually connected with the senior management of the firm. Some large companies have their

separate treasury and controlling departments. In order to achieve their financing strategies they made financial plans. Financial planning is a mechanism where, how the organization determines their capital requirements by considering internal and external factors. This is how an organization framing of financial policies about their working capital requirements and potential investments. Financial fund forecasting establishes guideline for change and growth in a firm, which concern the major elements of a firm's financial and investment policies without examining the individual component of those policies in details. (Ross, Thompson, Christensen, Westerfield, & Jordan, 1994). In Sri Lankan context board of directors are appointed by the shareholders and they act for the sake of shareholders. Managers of the firm doing what the board of directors dictated, this is called the "Anglo-Saxon model". Corporate governance mechanism of Sri Lanka is significantly differ from the "Anglo-Saxon" system, when considering an ownership perspective and a banking relationship perspective. (Wellalage & Locke, 2012). In Sri Lanka, most of the firms, even those are listed or non-listed companies they are tend to rely on Bankers when they want financial support and they do not consider other sources of capital funding. Some other researchers

founded that the level of corporate debt in Sri Lanka is considerably less than developed countries corporate debt levels (Colombage, 2007). Company directors are taking decisions and the decision taken by the directors of the company have a significant impact on capital structure. The combination of debt and equity affects the achievements of the firms and firm's corporate Financial Leverage (Abobakr & Elgiziry, 2015). Most of the corporate governance researches have based on the experience of developed countries such as United States and other European economies. In developing countries corporate governance mechanism is scarce and therefore, in Sri Lanka, awareness of corporate governance is still limited or even non-exist. Most of Sri Lankan researches highly focused to determined relationship between board characteristics and capital structure decisions in listed manufacturing firms in Sri Lanka. (Wellalage & Locke, 2012), (Achchuthan, Kajanathan, & Sivathaasan, 2013) and some of researchers (Dissanayake & Dissanayake, 2019), (Ajanthan, 2013) have identified how board characteristics effect to the firm performance in listed manufacturing firms in Sri Lanka. Further some researchers in Sri Lanka have identified determinant of leverage with reference to the listed manufacturing companies in Sri

Lanka (Vijeyaratnam & Anandasayanan, 2015). Accordingly majority of corporate governance researches are focused on the direct relationship of board characteristics with corporate outcomes and they do not consider about effects on some of intervening variables such as Corporate Financial Leverage. Based on the research gap identified, this study investigates the affect of board characteristics on corporate financial leverage of non-financial companies listed in Colombo stock exchange.

This study gives a border idea about, how company can use corporate governance practices regarding to the composition of board of directors for adding additional value to the entity as a whole. Further, the research contributes to fill the existing gap by providing evidence of the relationship between board characteristics on corporate Financial Leverage in Sri Lankan listed non-financial companies. Board of directors of the company are considering one of the main tools of internal governance mechanism. Board effectiveness on corporate governance may differ according to the board features and therefore, the results may help firms to take proper decisions regarding the appointment of board members.

## 1.1 Research Problem

Since, most of the researchers have not focused on impact of board characteristics on corporate financial leverage, researchers have identified research problem as,

“Does Board Characteristics affects Corporate Financial Leverage?”

## 1.2 Research Questions

Researchers have identified followings as a research questions.

- 1- Does board size affect significantly and positively to corporate financial leverage?
- 2- Is there a significant negative impact of proportion of females on the board on corporate financial leverage?
- 3- Does proportion of board non-executive directors affect significantly and positively to corporate financial leverage?
- 4- Does board independence affect significantly and positively to corporate financial leverage?
- 5- Is there a significant positive impact of CEOs duality on corporate financial leverage?
- 6- Does board tenure affect significantly and positively to corporate financial leverage?

### 1.3 Research Objectives

In this study researchers have mainly identified following objectives,

#### 1.3.1 Main Objective

To identify the impact of board characteristics on corporate financial leverage

#### 1.3.2 Sub objectives

- 1- To identify the impact of board size on corporate financial leverage
- 2- To investigate the impact of proportion of females on the board on corporate financial leverage
- 3- To examine the impact of proportion of board non-executive directors on corporate financial leverage
- 4- To identify the impact of board independence on corporate financial leverage
- 5- To examine the impact of CEOs duality on corporate financial leverage
- 6- To investigate the impact of board tenure on corporate financial leverage

The subsequent sections of the article analyze the theoretical and empirical reviews and developed hypotheses of the researches and then discusses the data, variables, methods, procedures, findings,

conclusion and the recommendations are also discuss thereon.

## 2. LITREATURE REVIEW AND HYPOTHESES

In the Literature Review, one by one describing, summarizing, objectively evaluating and clarifying of previous research findings and theoretical aspects in order to gather good sense of knowledge.

### 2.1 Theoretical Framework

For the success and getting support for the conclusion, it is important to follow up theories derived by some experts. According to that, following theories are important in explaining Financial Leverage, capital structure and financial performance of the company.

#### 2.1.1 Modigliani-Miller (MM) Theory

The modern corporation has no “owners” instead of that it is an interconnected set of contracts among the several of stakeholders. They are shareholders, lenders, employees, managers, suppliers & distributors. They all are getting decisions toward the success of the firm. The perfect combination of capital structure financing is critical factor to company success(John & Campbell, 1999). The theory of Modigliani-Miller (MM) states that, in a world without taxes, firms are

indifferent to capital structure and, in a world of corporate taxes where there is no financial distress costs, all firms should be 100 percent debt-financed. In the corporate world, firm's management shall consider tax impact, cost of financial distress as well as agency cost. Since, a firm may issue debt capital only up to the certain point. When financial distress becomes a real threat beyond that certain level, the firm might issue equity capital instead of debt capital. (Ross, Westerfield, & Jaffe, 2005).

### **2.1.2 Agency costs and capital Structure**

#### **Agency costs of debt**

The agency costs of debt include overseen and control expenditure in order to ensure that the stakeholders as well as discount at which the bond of more leveraged companies sell do not exploit bondholders. Further, it includes cost arising as a results of loans taken by the company which will reduced the flexibility of operation and investment ability. Agency cost of debt reduces amount of debt including firm's capital structure due to conflict of interest and cost will increase with corporate financial leverage (Shapiro & Balbirer, 2000).

#### **Agency cost of equity**

When outside equity increases consequence agency cost of

equity rise. There is a trade-off in-between agency cost of equity and agency cost of outside equity. When adding more outside equity capital in to the capital structure management interest over the firm diminish with its stake in the firm. One extreme, if management owes entire percentage of ownership to having no interest, desire to forth the effort and risk taking in order to maximize shareholder wealth dramatically change.

### **2.1.3 Resource dependency theory**

Resources are always not readily available for obtained and it may be scarce or under the control of uncooperative actors. Resulting of this will create differences in power and access to the resources. To eliminate this resource dependencies, firms develop sound business strategies and internal structures to enhance organizations' bargaining power with regard to resource related transactions. It includes developing sound supplier relationship, diversification of current business sector and increasing scale of production. Some strategies such as diversification of current production portfolio can mitigate the dependence on other business sectors and it enable to increase its power and leverage. Typically an organization maintain and adjust their business strategies to keep power full relationship with other entities. Increasing

uncertainty of resources and level of dependence will increase needs for keep sound relationship with other companies. Resource dependence theory more focuses on functions of board of directors with regard to providing different ways to resources required by the firm. This is demonstrating that the directors of the company providing or secure the required resources to the company by using there linkage with external environment.

#### **2.1.4 Pecking – Order theory**

When firm needs to raise new capital, company may faces choice between whether issuing debt capital or equity capital. To reach final conclusion company can depend on agency costs, distress costs or amount of tax benefits. Before the implementation of laws regarding to inside dealing managers unfairly have used their prospect prior to equity issuance. Even today, managers are willingness to issue equity shares after the price of stock has risen since, timing is very important motivation to get decision of equity issuance. Managers must know about company prospect than typical investors. If managers' estimation about company is not better than typical investors does, any attempts may take by the management not succeed. Accordingly, when stocks are undervalue, straightforwardly company can issue debt capital instead of

equity capital and further company can issue debt capital even though firm is overvalued. Ultimately if company issue equity shares to the public, investors are thinking that the firm's stock prices are overvalued. Therefore, investors will not buy shares until they realized company do not gain any advantages from equity issuance. End of this no one issue equity and instead of that company issue debt capital and this will cause to increasing financial leverage of the company.

In real world, finance managers must consider tax benefits, agency costs and financial distress cost prior to make their decisions. Firms may issue debt capital up to the certain point and if financial distress become real possible then beyond that company should issue equity capital (Ross, Westerfield, & Jaffe, 2005).

## **2.2 Empirical Review**

### **2.2.1 Board Size**

Previous researchers have found and suggested that board size and directors appointed to the board from outside are positively related to the total debt ratio and some control variables such as profitability and liquidity are negatively related to the total debt ratio (Sheikh & Wang, 2012). Leverage is only variable that creates significant negative impact on company performance. Further researcher have found



Board composition and Board size positively correlated with the debt ratio in sample of 28 Sri Lankan manufacturing companies. (Dissanayake & Dissanayake, 2019). Nevertheless, by using 18 listed Sri Lankan manufacturing companies' researchers found that there are negative relationship between Board Size, Board Independence with Debt Ratio (Ajanthan, 2013). Tangibility, firm size and firm growth have significant effect in capital structure decision in Sri Lankan manufacturing companies. Accordingly, researchers have found leverage decision influenced only by firm Size, firm growth in service companies while leverage decision of manufacturing companies influenced by only profitability variables (Buvanendra, 2013). Proportionate of Non-Executive directors, leadership style of the management, board meetings and board size creates positive relationship with leverage in Sri Lankan listed manufacturing companies. (Rajendran, 2012).

Further, board size and board independence positively, significantly affect the corporate financial leverage (Hanh Song & Nguyen, 2019).

Accordingly researchers have developed the first hypothesis for the study as,

H1: There is a significant positive impact of board size on corporate financial leverage.

### **2.2.2 Females on the Board**

When the female directors are present on the board, it has been reducing the information asymmetry and managerial missed behaviors (Usman, Farooq, Zhang, Majid Makki, & Khan, 2019) presence of the females on the board changing the behavior of male directors on the board (Ahern & Dittmar, 2011). Gender diversity with positive relationship on financial leverage, agreed resource dependence theory and it indicates when firms have a diversified board characteristics it gives the firms advantages to having external funds and gain tax shield benefits (Monther, 2015). However, higher level of board diversification may result positive relationship with leverage (Lückerath-Rovers, 2013) and again this accepted by (Alvesa & Couto, 2014).

Risk averse female directors in the board keep lower level debt ratio compare with other companies that do not have female representation in the board (Harris, 2014). Further, researchers found that having more proportionate of female directors will result lower level of insolvency risk (Wilson & Altanlar, 2009).

Accordingly researcher has developed the second hypothesis as,

H2: There is a significant negative impact of proportion of females on the board on corporate financial leverage

### **2.2.3 Non-Executive Directors**

Higher proportionate of Non-Executive directors seems have easier access to the loans and therefore, applied a higher level of leverage and higher level of debt. According to the Stewardship theory CEO duality decreases the communication struggles and creates a clear sense of centralized decision-making (Vakilifard, Gerayli, Yanesari, & Ma'toufi, 2011) (Mokarami , Ahmadi, & Hosseinzadeh, 2012). Non-Executive directors are accountable to shareholders of listed manufacturing firms in Sri Lanka since, they have leading higher debt policy (leverage) (Wellalage & Locke, 2012). Same positive relationship has been identified by (Rajendran, 2012) in Sri Lanka. Further, this is confirmed by (Hsien, Wang , & Liu, 2012). When there is as fidelity or loyalty management, then can be expect negative relationship with financial leverage (Jensen, 1986).

Accordingly, researchers have developed the third hypothesis as,

H3: There is a significant positive impact of proportion of board non-executive directors on corporate financial leverage

### **2.2.4 Independent Non-Executive Directors**

In the Sri Lankan study, it was found that board independence has negative relationship with financial leverage (Ajanthan, 2013). Board independence positively, significantly affect the Corporate Financial Leverage (Hanh Song & Nguyen, 2019). Outside directors positively related to the total debt ratio and long term debt ratio(Nadeem & Zongjun , 2012) According to the resource dependence theory indicates that the Independent directors positively affect to the debt ratio due to the outside relationship that they have with debt providers.

Accordingly, researchers have developed the next hypothesis as,

H4: There is a significant positive impact of Board independence on corporate financial leverage

### **2.2.5 CEOs Duality**

CEO Duality creates positive relationship with Corporate Financial leverage and this has confirmed stewardship theory, since clear centralized decision making (Abor, 2007).Same

positive relationship with corporate finance leverage have identified by (Vakilifard, Gerayli, Yanesari, & Ma'toufi, 2011) and (Mokarami, Ahmadi, & Hosseinzadeh, 2012). When CEO is holding dual responsibility it will lead to take immediate decisions and have a positive relationship with leverage (Uddin, UddinKhan, & Mosharrof, 2019). This positive relationship confirmed by (Uwalomwa, 2014).

Accordingly, researchers have developed the fifth hypothesis as,

H5: There is a significant positive impact of CEOs duality on corporate financial leverage.

### **2.2.6 Board Tenure**

When board has not effective industry experience, it lead maintaining a lower level of leverage. When board has sound industrial experience lead positive impact to the leverage. (Tarus & Ayabei, 2015). When board of directors have sound experience in the industry they will come across with superior monitoring abilities they are encouraging debt capital to increase firm value. Since, board tenure have positive relationship with corporate financial leverage. This has been confirmed by pecking – Order theory.

Accordingly, researchers have developed the last hypothesis as,

H6: There is a significant positive impact of board tenure on corporate financial leverage.

## **3. METHODS**

### **3.1 Sample and Data**

This research focused on the factors influencing corporate Financial Leverage of an entity that are public listed in Colombo stock exchange. For logically conducting this research, researcher selects actively trading, listed companies that are registered in Main board and Dirisavi board covering nine year of assessments for each selected companies. The Colombo Stock Exchange (CSE) has 289 companies representing 20 Global Industry Classification Standards (GICS) industry groups as at 20th January 2020, with a Market Capitalization of Rs. 2,748.10 Bn. According to the CSE Data base there are 48 Diversified Listed Financial Companies, 11 Listed Banks, and 10 Listed Insurance Companies & 19 Real Estate Companies.(Exchange, 2019). After removing all financial companies, population is limited to 201 listed entities & from that, 100 most actively highest market capitalized trading non-financial listed companies selected as the sample of this study and total sample covers, approximately 50% to the total population. The

reason for the selection of Non-Financial Companies for the study is financial sector companies are different in terms of company assets, an operating functions, and regulatory requirements of manufacturing sectors. Further, financial companies excluded from the analysis because of the differences in Leverage and corporate governance mechanism in between these and other industries (Berge, Ofek, & Yermack, 1995). In this study researchers have removed banks, insurance companies and leasing companies and real estates. This has confirmed by (Thi Pham & Nguyen, 2019), (Uddin, UddinKhan, & Mosharrof, 2019). When selecting of the sample manufacturing companies, which did not start their operations before, 2011 excluded in sample size. The sample has selected under purposive sampling method and sample includes both financially strong and weak companies but companies that find financial discrepancies excluded from the sample because of the probability of bankruptcy, which can have a significant impact on the company's financing decisions. Required non-financial and financial data is obtained from a Data Stream database and Companies Annual Reports. Sample period for the current study was selected period covering 2011 to 2019

### 3.2. Variables

In this study independent variables are Board Size, Non-Executive Directors, Independent Directors, Board Gender diversity (Number of Female Directors on Board), CEO Duality and Board Tenure and Dependent variable is Corporate Financial Leverage. For the study, control variables are Firm Size, Firm Age, and Tangibility. These variables have confirmed by (Abobakr & Elgiziry, 2015). Some other researchers also have been taken same independent variable for their study (Elabed & Chokri, 2017). (Tarus & Ayabei, 2015), have been identified Board Size, Board Independence, CEO Duality, and Board Tenure as an independent variables for the study and Firm size and Firm age as control variables. The Fixed effect multiple regression models (OLS) have used to analyze of the data. The researcher followed the model as,

$$\begin{aligned} \text{TFL} = & \beta_0 + \beta_1 (\text{BS}) + \beta_2 (\text{NEX}) \\ & + \beta_3 (\text{INEX}) + \beta_4 (\text{CEOD}) + \beta_5 \\ & (\text{BFE}) + \beta_6 (\text{BTN}) + \beta_7 (\text{FS}) + \\ & \beta_8 (\text{FAG}) + \beta_9 (\text{TAN}) + \varepsilon \quad (1) \end{aligned}$$

TFL	=	Corporate Financial Leverage
$\beta_0$	=	Intercept coefficient
$\beta_1$	=	Coefficient for each of the independent variables
BS	=	Board Size
NEX	=	Proportion (Percentage) of independent non-executive directors sitting on the board
INEX	=	Proportion (Percentage) of independent non-executive directors sitting on the board
CEOD	=	CEO Duality
BFE	=	Percentage of females to the total board
BTN	=	Average tenure of the board of directors
FS	=	Firm Size
FAG	=	Firm Age
TAN	=	Book value of fixed Assets
$\varepsilon$	=	Error

#### 4. RESULTS

Before analysis of the relationship among the board characteristics and corporate financial leverage, it is essential to check the stationery of the data. Levin, Lin, and Chu (2002) test to find out the stationary of the data set. For the purpose of that researcher has used hypothesis as,

Null Hypothesis; Panel Data has a unite root.

Alternative Hypothesis; Panel Data has no unit root

**Table 1: Summary of unit root test**

Variables	P- Value (Levin, Lin & Chu t*)	Stationary	Test for Unite root
TFL	0.0000	✓	I(0)
BS	0.0000	✓	I(0)
NEX	0.0000	✓	I(0)
INEX	0.0000	✓	I(0)
BFE	0.0000	✓	I(0)
BTN	0.0000	✓	I(0)
FS	0.0000	✓	I(0)
FAG	0.0000	✓	I(0)
TAN	0.0000	✓	I(0)
CEOD	0.1988	X	

Source: Annual audited financial reports 2011 to 2019.

Less than 0.05 (5%) p-value of the unite root test indicates, the null hypothesis is rejected, while the alternative hypothesis is not rejected. It means that the data series is stationary. Conversely, when the p-value of the unit root test is more than 0.05 (5%), the null hypothesis is accepted. It implies that the alternative hypothesis is rejected. Suggesting that the data series is non-stationary.

#### **4.1 Descriptive Analysis**

When considering Corporate Financial Leverage that the total debt to assets shows that overall mean of 41.60 % and it indicates Non-Financial Listed Entities in Sri Lankan corporations depend more on equity financing than debt. When specifying the characteristics of the board it shows that Maximum board members are limited to 15 while Minimum members are 4 with average about 8 members. The Independent directors are ranging Minimum 11 percent and Maximum of 100 percent with overall mean value 37.70 %

indicating that from the total board members in the board, 37.70 % are independent directors. Non-Executive non-independent directors are ranging from 0% to 100% with a mean value of 30.81%. Implication is such that the majority of the company board represent Independent Directors than Non-Executive directors. CEO duality records about 10 percent indicating that 10 percent of the sample has the CEO and the board chair as the same person. According to the Code of best practice on corporate governance in Sri Lanka, it is stated that there should be a clear division of responsibilities among the chairman and CEO. 10% is not a significant amount and it indicates most of the companies segregated their authority level of those two possessions. Since no individual can use unfettered power. Female percentage in the board is ranging 0 % to 77.77% and averaging amounting about 8 %. That shows that every public listed company is giving about 8 % opportunity to female directors to represent the board.

**Table 2: Descriptive Analysis**

	Mean	Median	Maximum	Minimum	Std. Dev
TFL	41.60266	37.04668	851.3850	0.100606	64.35729
BS	8.478889	8.000000	15.00000	4.000000	1.962552
NEX	30.81437	28.57143	100.0000	0.000000	19.38136
INEX	37.70374	36.36364	100.0000	11.11111	13.08961
BFE	8.147557	8.012821	77.77778	0.000000	10.39929
BTN	28.07660	28.00000	56.71429	13.54545	4.660551
FS	15.51139	15.52447	18.94857	12.71292	1.073561
FAG	3.044665	3.178054	4.510860	0.000000	0.822010
TAN	86.96741	30.93778	45551.73	0.000000	1517.511
CEOD	0.105556	0.00000	1.000000	0.000000	0.307439

Source: Annual audited financial reports – 2011 to 2019

#### 4.2 Hausman Test

Researcher required knowing which effect (fixed or random effect) shall use, before running a regression model with using cross sectional/Panel data. For that researcher can use the Hausman Test. If the P-value of the Hausman Test is less than 0.05, (5%) that implies that the researcher needs to select the

Fixed Effect and if the P-value of the Hausman Test is greater than 0.05 (5%) researcher should select the random effect. Hypotheses that can be tested here are,

Null; Random effect is appropriate.

Alternative; Fixed effect is appropriate can be used

**Table 3: Hausman Test (TL)**

Correlated Random Effects - Hausman Test			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	35.953935	09	0.0000

Source: Annual audited financial report 2011 to 2019

According to the above results, the dependent variable (TFL) P-values less than 0.05 (5%). Hence, Null Hypothesis is rejected and Alternative Hypothesis is not rejected.

Therefore, the researcher needs to consider the fixed effect regression in order to further analysis of the model.

#### **4.3 Regression Analysis.**

According to the Best Model of Regression Analysis (Fixed Effect Method) coefficient of determination,  $R^2$  about 0.88 (88%).  $R^2$  indicated that the changing of the TFL is decided 88% by the independent variables of this study. According to the regression analysis, p-value of the some variables was less than .05000 and hence null hypothesis

were rejected while alternative hypothesis were accepted. That means changing in those variables have a significant impact on corporate Financial Leverage. Here BS, NEX, INEX, FAG, & TAN create positive impact on corporate Financial Leverage while BFE, BTN, FS & CEOD creates negative impact on corporate Financial Leverage. Probability value of Non-executive directors is lower than 0.0500, (p-value = 0.0260) hence significant to the TFL. P-value of INEX is lower than the 0.05(5%), (P-value = 0.0144) meaning independent Non-Executive directors having a significant impact on the TFL. The BTN is having a significant impact to the TFL (p-value = 0.0371) since the P-value of BTN is lower than the 0.05(5%).



**Table 4: Regression Analysis**

Dependent Variable: TL				
Method: Panel Least Squares				
Sample: 2011 2019				
Periods included: 9				
Cross-sections included: 100				
Total panel (balanced) observations: 900				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	32.98150	42.70521	0.772306	0.4402
BS	0.434345	1.035614	0.419408	0.6750
NEX	0.187644	0.084135	2.230277	0.0260
INEX	0.290467	0.118392	2.453440	0.0144
CEOD	-87.24725	8.880799	-9.824256	0.0000
BFE	-0.211624	0.179644	-1.178018	0.2391
BTN	-0.636981	0.305090	-2.087845	0.0371
FS	-0.034646	3.172373	-0.010921	0.9913
FAG	5.764885	3.927112	1.467970	0.1425
TAN	8.93E-05	0.000564	0.158315	0.8742
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared				0.877706
Adjusted R-squared				0.861009
Durbin-Watson stat				0.525803
Prob(F-statistic)				0.000000

Source: Annual audited financial reports – 2011 to 2019

#### 4.4 Hypotheses

H1: There is a significant positive impact of board size on corporate financial leverage.

H2: There is a significant negative impact of proportion of females on the board on corporate financial leverage

H3: There is a significant positive impact of proportion of board non-executive directors on corporate financial leverage

H4: There is a significant positive impact of Board independence on corporate financial leverage

H5: There is a significant positive impact of CEOs duality on corporate financial leverage

H6: There is a significant positive impact of board tenure on Corporate Financial Leverage

**Table 5: Results of Regression**

Hypothesis	Significance level	Impact	Result
H1:	0.6750	Positive	Rejected
H2:	0.2391	Negative	Rejected
H3:	0.0260	Positive	Accepted
H4:	0.0144	Positive	Accepted
H5	0.0000	Negative	Rejected
H6:	0.0371	Negative	Rejected

Source: Compiled by authors

## 5. DISCUSSION

Total Financial Leverage is significant and positively related to the proportionate of independent directors. Further, results show that maintaining debt policies, Non-Executive independent directors ensure the accountability of inside directors. This positive relationship was accepted by the research study in Sri Lanka. It indicated that listed manufacturing companies proportionate of Non-Executive directors and leadership style have positive relationship with leverage (Rajendran, 2012). However, contrast results found by another researcher. In the Sri Lankan context outside non-executive directors have a negative impact upon Sri Lankan companies' debt levels. Further CEO variable is positive and statistically significant and CEO Duality is increasing the debt usage

(Wellalage & Locke, 2012) Independent directors are more likely to use higher leverage because of the networks they have access to and their ability to link the firm with providers of debt capital (Tarus & Ayabei, 2015). This supported the researcher's conclusion. Accordingly, the third and fourth Hypothesis have been accepted. According to the findings of the research, Total Financial Leverage has a significant and negative relationship with CEO duality. Once the CEO and Chairperson are of the same particular character then it is easy to take a loan from outside. If the CEO holds dual authority, then it is flexible to generate external funds. This argument was accepted by the (Uddin, UddinKhan, & Mosharrof, 2019). Since the study identified a significant negative

relationship, the fifth hypothesis has been rejected. Further, researchers have identified tangibility is not a significant factor to influence corporate financial leverage and the same thing confirmed by (Vijeyaratnam & Anandasayanan, 2015) with special reference to listed manufacturing companies in Sri Lanka. In this study researchers have identified board tenure has negative impact to the corporate financial leverage and it is statistically significant. Most of the researchers have identified board tenure has a significant positive impact on corporate financial leverage (Tarus & Ayabei, 2015) . Since, the final hypothesis has been rejected.

## 6. CONCLUSION

The findings of the research can be applicable to the companies, which are actively trading Non-financial listed companies in Colombo stock exchange. The overall results gave the conclusion that the board characteristics played a vital role in determining corporate Financial Leverage of Sri Lankan Non-Financial Listed firms.

## 7. RECOMMENDATION

This research paper article may give a border idea about how a company can use corporate governance practices regarding the composition of the board of directors for adding additional value to the entity as a whole.

When a company wants to maintain a lower level of leverage within the organization, it is recommended to appoint directors who have good experience about the industry. Experienced board members may lead to better management strategic decisions and keep lower level of leverage. Ownership structure of an organization is a critical factor to its owners. To raise the funds the company can issue new equity shares and it will result in changing the company ownership structure. Hence, it has recommended to appoint more independent directors and non-executive directors in order to maintain the existing ownership structure. Since, they are more likely to raise funds from external sources rather than issuing new equity shares. Further, study has found female director's representations on the board are at a very lower level. Since, policy makers should take appropriate actions to enhance the level of participation of females to the board.

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## **Factors Influencing Technical Efficiency of Paddy Farms in Mullaitivu District: Non – Parametric Approach**

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### **Abstract**

Technical efficiency means the effectiveness which a given set of inputs used to produce a given output and it helps to produce the maximum output using minimum quantity of inputs for any firm or farm products. The objectives of this study are to estimate the Hicks – Moorsteen index and examine the impact of demographic, economic, farming and environmental characteristics on total factor productive efficiency index. Further, this study evaluate the overall performance of paddy farmers (n= 200) and identify the factors affecting the efficiency using two – stage Data Envelopment Analysis (DEA) during 2019/2020 period in Mullaitivu district of Sri Lanka. Hicks – Moorsteen index showed that among the components of the index, 94% of the highest mean value was attained in Input Oriented Technical Efficiency (ITE) followed by 93% of efficiency was attained in Output Oriented Scale Efficiency (OSE). Tobit regression results suggested that education, availability of training and destroy the crops whether the crops were damaged by environmental factors were significantly affecting the Hicks – Moorsteen index. Further, results of two – stage input-oriented DEA revealed that on average the overall technical efficiency of paddy farms was nearly 42%, scale efficiency was nearly 45% and variable returns to scale technical efficiency was nearly 93%. The Tobit regression results showed that, education, land ownership, amount of savings, loan size, land quality and farm income were positively impact on overall technical efficiency while experience, ownership of land, amount of savings and destroy the crops whether the crops were damaged by environmental factors significantly affected on technical efficiency. Conversely, scale efficiency of paddy farming mostly influenced by education, land ownership, saving amount, loan size, quality of land and farm. The paper concludes that both input oriented technical efficiency and output oriented scale efficiency need to be improved further as well as scale efficiency mostly affected by economic and farming characteristics in the study.

**Keywords:-** Farming characteristics, Hicks – Moorsteen index, Scale efficiency, Tobit regression, Two – stage data envelopment analysis.

## 1. INTRODUCTION

Agriculture sector plays a vital role in the Sri Lanka. In 2019, the average contribution of this sector to countries Gross Domestic Product (GDP) was 7.42 percent, and also provides 23.73 percent of the employment to the countries workforce. During recent decades agriculture has experienced major gains in productivity however, the rate of increase has slowed down in developing countries including Sri Lanka in recent years. Paddy productivity in Sri Lanka was 4 to 5 tons per hectare from 2005 to 2009. Year by year, it has steadily declined. Furthermore, it was 5 tons per hectare from 2009 to 2015, and 3.4 tons per hectare from 2015 to 2019 (Department of Censes Statistics report, 2019). Among the agriculture sector, paddy sector in Sri Lanka playing a major role in terms of supplying food requirement and contributes to the GDP and provides employment opportunities. To increase the efficiency in agriculture sector including paddy sector is the way to upgrade the sector which enhance the living standards of the rural people in Sri Lanka. In this background, this study aims to identify the technical efficiency and its determinants of paddy cultivation in Mullaitivu district. Paddy production sector is a main sector, which gives lower productivity and lower income to the people. Significant new laws and policies have been introduced

in the past and present to achieve paddy self-sufficiency and increase farmers' profits. Sri Lanka has recently been able to approach self-sufficiency, but has struggled to meet the satisfaction of poor farmers, whose quality of living has deteriorated. Sri Lankan agriculture faces a significant challenge if it is to boost economic performance and living standards through productivity growth in rural area.

In contrast to other districts in the north, Mullaitivu is considered one of the more prosperous districts (Statistical Hand Book, Mullaitivu, 2019). The majority of people in Mullaitivu district live below the poverty line Furthermore, agriculture is the primary source of income for the vast majority of rural people in the Mullaitivu district. Farming is the primary occupation of more than 61 percent of all families. Around 23,737 farm families are directly involved in paddy farming at the present time, and the district has 17,320 Ha of suitable land for paddy cultivation. (Department of Agriculture report, Mullaitivu, 2020). Unfortunately, the majority of the farmers are small landowners with less than 0.405 Ha of land, and they often face income insecurity from farming, leading to extreme poverty among the farmers and a reduction in their living standards in the study area. An increase in the productivity of paddy farming may be significant not only to get

a better harvest but also to improve the standard of living of employees in paddy farming. This objective can be achieved by improving the technical and allocative efficiencies of paddy farmers which provides an opportunity to produce the maximum harvest without an increase in inputs. Based on these facts, the research problem of this study can be stated in the following manner: how do we improve the technical efficiency of paddy farmers in Sri Lanka in order to increase the paddy production? This study is based on this main question. Against this backdrop, the aim of this study is to analyse and empirically determine the technical and allocative efficiencies of paddy farmers in major paddy growing areas in Mullaitivu.

## 1.2 Objectives of the study

This study focused on the following objectives.

- ✓ To estimate the various components of Hicks–Moorsteen total factor productivity index of paddy farms in Mullaitivu district.
- ✓ To identify the impact of demographic, economic, farming and environmental characteristics on Hicks–Moorsteen total factor

productivity index of paddy farms.

- ✓ To evaluate the overall performance of paddy farms using two stage input–oriented data envelopment analysis in the study.
- ✓ To examine the factors which affecting the variable returns to scale technical efficiency of paddy farms in the study.

## 1.3 Review of literature

There are number of studies done by other researchers on technical efficiency of various crops using different methods in different countries. Most of the studies on determinants of technical efficiency of paddy and other vegetable crops done by Sri Lankan researchers using stochastic frontier approach and Translog production frontier method and they are a lack of studies on Hicks – Moorsteen index and Two-Stage DEA in paddy production. Therefore, this study seeks to investigate the factors Influencing Technical Efficiency among paddy farmers at their farm level and fill the research gap using Hicks – Moorsteen index and Two-Stage DEA in Mullaitivu district.

Nugawela (2019) analysed Sri Lanka’s total factor productivity

change during conflict and post-conflict periods using Solow's Residual model and an Index number approach (Hicks-Moorsteen Total Factor Productivity Index). Finding of both approaches reveal that the TFP growth during the conflict period was higher than that of the post-conflict period. Based on the decomposition of HMTFPI into Technological Change (TC) and Efficiency Change (EC) indices, it was revealed that the main source of TFP change throughout the sample period is TC. EC had been negative throughout the sample period.

A parametric approach was utilized by Shantha *et al* (2013) have examine the technical efficiency of paddy farming under major irrigation conditions in the dry zone of Sri Lanka. The empirical study was carried based on a sample of 357 paddy farmers under Nagadeepa reservoir and the results of average technical efficiency of selected farmers given by the Translog model is 72.80 percent. This indicates that there is scope of further increasing the output by 27.2 percent without increasing the level of input.

Peng *et al* (2020) used the Hicks-Moorsteen total factor productivity index method, the study indicates the total factor productivity of cultivated land use CL-TFP presents a

fluctuating upward trend and reaches data envelopment analysis (DEA) efficiency during the sample period. The regional results reveal a significant spatial difference, especially in the mid-west region, which fails to reach DEA efficiency. China's main cultivated land did not realize economies of scale.

Linh *et al* (2017) to identify the factors influencing efficiency using two-stage DEA approach. Estimated results in the first stage of DEA showed that the farmers achieved relatively high overall technical efficiency and scale efficiency score (0.801 and 0.966, respectively). Most of the rice producers operated their farms at decreasing returns to scale. The study also indicated positive impacts of education on technical efficiency while other factors including credit access, training and rice cultivated area showed negative influences on the rice farm efficiency. This result suggests that the policy makers should pay more attentions on technical training and credit programs for the farmers to increase their technical efficiency in rice production.

Estimation of technical efficiency in the Translog stochastic production frontier model with an application to oil palm produce mills industry in Nigeria were analysed by Amaechi *et al* (2014). They used a multi stage sampling method to select 30 mills in the study area and their

estimated technical efficiency results showed that, firm level technical efficiency means of 70.62 varies with the range of 37.42% to 93.46%. This wide variation in oil farm output of millers from the frontier model found that those differences management practices of millers than random variability. In addition, their study implies that education, processing experience, membership of cooperative society, credit, fruits petroleum energy and water are the major determinants of technical efficiency (Khaile ,2012). Results on the second stage of the two-stage DEA model revealed a mean quality efficiency of 97% for small-scale farmers when benchmarked against each other. The results indicate that small-scale farmers have the potential to increase their mean efficiency by three percentage points to operate on the quality efficient frontier when benchmarked against each other. A benchmark of both small-scale and large-scale raise in producers revealed a mean quality efficiency of 79% and 88% respectively. The scope of variations between the quality efficiency scores of small-scale farmers was recognized to be limited.

However, the most of the researches have been done using different non parametric index in worldwide, it is very little bit in Sri Lanka especially in Mullaitivu District. The absence of quantitative research on technical

efficiency on paddy farming is one of the main problems for policy makers in decision making, consequently, it seems that there is a gap in the theoretical knowledge and quantities measurement of technical efficiency of paddy farm in Sri Lanka.

## **2. METHODS**

This section covers the study area, sources of data collection and the method of techniques which are employed in the study.

### **2.1 Study area**

Mullaitivu district is one of the major paddy cultivating districts in Sri Lanka in Northern Province under dry zone. The district has 17320Ha of cultivable lands for paddy cultivation which is the major income earning source of the rural people. To estimate the total factor productive efficiency and identify the factors determine the different efficiency components, Hicks – Moorsteen total factor productive index and two stage DEA approach were used in the study. For the purpose of these data analysis Maritimé pattu DS division in the district was selected and using multistage sampling method, six villages were taken as the study area. From each village, 20 farmers were selected randomly and finally 120 farmers were selected in the study. The output and inputs data on paddy farming in terms of quantities and in expenditures were collected

through a questionnaire for the period 2019/2020.

## 2.2 Method of data collection

The study mainly used the primary data which was collected with the aid of pretested semi-structured questionnaire from cross sections of paddy farmers in the study area. A questionnaire based survey was conducted during 2019/2020 production season to collect the relevant data from the paddy farmers in the selected study area. The collected data were used to estimate the total factor productive efficiency using Hicks – Moorsteen index and two – stage input-oriented data envelopment (DEA) approach also applied to estimate the technical efficiency levels under CRS, VRS and scale efficiency of paddy farms in the study. To identify the impact of demographic, economic, farming and environmental characters on Hicks – Moorsteen index and on variable returns to scale technical efficiency, Tobit regression model was estimated.

## 2.3 Methods of data analysis

This study used non – parametric approach focusing on Hicks – Moorsteen total factor productivity index and two – stage data envelopment analysis to estimate the decompositions of technical efficiency and its determinants of paddy farmers in the study.

### 2.3.1 Hicks – Moorsteen total factor productivity index

To overcome the deficiency in the Malmquist index, Hicks - Moorsteen Total Factor Productivity Index (HMTFPI) was used. It can be defined as the ratio of growth in outputs to growth in inputs (Diewert, 1992), where growth in outputs and inputs are measured through index numbers.

$$HMTFPI = \frac{\text{Growth in output}}{\text{Growth in inputs}}$$

Bjurek (1996) re-introduced a modified approach of calculating the existing Hicks-Moorsteen Total Factor Productivity Index (HMTFPI) as a ratio of Malmquist output and input indices.

$$HMTFPI = \frac{\text{Malmquist output index}}{\text{Malmquist input index}}$$

Once growth in inputs and outputs are measured through an appropriate index (among any available indices), measuring change in productivity through HMTFPI is easy, and it also provides the source of change (whether it is technological change or efficiency change) (Nemoto and Goto, 2005). Accordingly, the decomposition of HMTFPI in to TC and EC

component indices can be presented as:

$$HMTFPI = \frac{M_0(y_t, y_{t+1}, x_t, x_t)}{M_0(y_t, y_{t+1}, x_t, x_t)}$$

$$= \left( \frac{(D_0^t(y_{t+1}, x_{t+1}) \times \frac{D_0^t(y_t, x_t)}{D_0^{t+1}(y_t, x_t)})}{(D_0^{t+1}(y_{t+1}, x_{t+1}) \times \frac{D_0^{t+1}(y_t, x_t)}{D_0^t(y_t, x_t)})} \right)^{\frac{1}{2}}$$

Where,  $Tc = \left( \frac{D_0^t(y_{t+1}, x_{t+1})}{D_0^t(y_t, x_t)} \right) \times$   
 $\left( \frac{D_0^t(y_t, x_t)}{D_0^t(y_t, x_t)} \right)^{1/2}$  and  $Ec =$   
 $\left( \frac{D_0^{t+1}(y_{t+1}, x_{t+1})}{D_0^T(y_t, x_t)} \right)$

A value of a component index greater than 1 indicates improvement, while a value less than 1 indicates deterioration of the conditions. Further, in the absence of panel data, the HMTFPI is preferred over the Malmquist index, as the Malmquist approach uses the concept of cone technology, which requires a dataset large enough to provide a good description of the underlying technology (Coelli *et al.*, 2005). Decomposition of Productivity Index Numbers (DPIN) software has been used to compute the HMTFPI and its components in the data analysis.

### 2.3.2 Two – Stage of Data Envelopment Analysis

Data Envelopment Analysis (DEA) method was used in this

study to obtain efficiency scores of paddy production in Mullaitivu of Sri Lanka. DEA was solely used for the analysis of TE because it has the capability to integrate technical parameters that might not be captured by parametric production efficiency techniques and its ability of tackling multiple inputs and outputs (Coelli *et al.*, 2005). The efficiency of a firm is calculated based on the DMUs' observed best practice (Coelli *et al.*, 2005). Those DMUs lying on the frontier, with a score of 1 are considered as efficient relative to the rest of the samples, whereas those lying below the frontier, with a score of less than 1 are classified as inefficient. All efficiency scores in DEA fall within 0 and 1. Inefficiency level of a DMU is determined by how far this DMU is from the frontier. The further away from the frontier the DMU is, the less efficient it is. DEA essentially measures the excessive use of resources for a given level of output (input orientated) or possible increase in output for an assumed level of resources (output orientated). According to Coelli *et al.*(2005) both output and input orientated models recognize the same group of efficient and inefficient DMU. Also, as the DEA approach does not acknowledge statistical complications such as simultaneous equation bias, the selection of particular orientation is not as critical as opposed to econometric techniques. Argued

by Coelli *et al.* (2005) that selection of any particular orientation should be based on the quantities over which the farmer has utmost control. Input-oriented method is adopted to calculate TE in this study. This technique is selected because in agricultural production farmers have more control on their inputs than output (Coelli *et al.*, 2005). This study applied the two-stage DEA to estimate technical efficiency for paddy farmers and identify factors associated with efficiency scores. The DEA approach was widely chosen for efficiency measurements because requirements related to assumptions in the form of production function and distribution of inefficiency terms are not compulsory requirements when applying this approach compare to the one-stage DEA, one sophisticated feature of the two-stage approach is that it takes into account the influence of exogenous variables on efficiency.

In the first stage, the DEA model under the assumption of input-oriented variable returns to scale was adopted to estimate overall and pure technical efficiency and scale efficiency scores. The model is specified as follows.

$$TE_{VRS} = \min_{\theta} \theta$$

Subject to,

$$y\lambda - yt = 0,$$

$$\begin{aligned} \theta x_i - x\lambda &\geq 0 \\ N1'\lambda &= 1 \\ \lambda &\geq 0 \end{aligned}$$

Where, Y and X represent output and input vectors respectively;  $\theta$  denotes a scalar and  $\lambda$  is an  $n \times 1$  vector of constants. The value varies from 0 to 1. A farm is full efficient when reaching technical efficiency score one. While inefficient farm has efficiency score lower than one scale efficiency (SE) of farms can be formulated by dividing CRS TE by VRS TE. In which, technical efficiency under CRS can be acquired by removing the convexity constraint ( $N_1'\lambda = 1$ ) in the above equation. Then scale efficiency can be specified as follows;

$$SE = \frac{TE_{CRS}}{TE_{VRS}}$$

In the second stage, the explanatory variables were regressed to efficiency scores obtained in the first stage DEA. Tobit regression model was popularly applied in this stage because efficiency scores estimated in the first stage ranged from zero to one and have censored distributions. The model is defined as follows:

$$\begin{aligned} Y_i^* &= x_i\beta_i + \mu_i \quad i \\ &= 1, 2, \dots \dots n \\ Y_i &= y_i^* \text{ if } y_i^* < 0 \end{aligned}$$

Where,  $\mu_i \sim N(0, \sigma^2)$ ,  $x_i$  are explanatory variables and  $\beta_i$  are unknown parameters;  $Y_i^*$  represents a



latent variable; and  $y$  is the efficiency scores measured in the DEA model.

### 2.3.3 Tobit regression model

Tobit model is employed to analyse the factors that determine the components of technical efficiency in paddy farms. The Tobit model is also known as truncated or censored regression model and be written as technical efficient function as given below:

$$TE_i = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \beta_9 x_9 + \beta_{10} x_{10} + \beta_{11} x_{11} + \beta_{12} x_{12} + \varepsilon_i$$

Where,  $TE_i$  indicates the components technical efficiency, such overall technical efficiency, pure technical efficiency and scale efficiency.  $\alpha$  indicates a constant term,  $\beta_1 - \beta_{12}$  indicate the coefficient of independent variables, and  $\varepsilon$  indicates an error term which  $TE \sim N(0, \sigma^2)$ .

## 3. RESULTS AND DISCUSSION

Technical efficiency of paddy farm in the study area is measured using two different methods namely, Hicks – Moorsteen total factor productivity index and two – stage input - oriented DEA

approach. The results derived from each method were described in the following sections.

### 3.1 Results of Hicks – Moorsteen total factor productivity index

A part of this study is to estimate the decompositions of Hicks – Moorsteen total factor productivity indices and its determinants of paddy sector in Mullaitivu of Sri Lanka. According to the Hicks – Moorsteen total factor productivity index method, the study mainly focuses on paddy yield as the output and labour in man days, size of cultivated land, amount of seed usage, fertilizer usage, amount of pesticide, costs of capital and machinery were taken as the major inputs. Table 01 represents the descriptive statistics of the output and inputs variables used in the analysis and according to that, average paddy yield is 18602 Kg per acre with the range of 5040Kg to 52560Kg per acre obtained by the farmers during the study period. Among the inputs, average cost of capital is the highest followed by machinery cost has the highest in the sample. Among other inputs measured in units, the average usage of seed and fertilizer are the highest inputs applied by the farmers in the study.

**Table 1: Descriptive statistics of the variables**

Variables	Mean	Standard deviation	Minimum	Maximum
Paddy Yield (Kg per acre)	18602.40	9907.838	5040	52560
Labour(Man days)	13.60	2.027	9	20
Land size (acre)	8.25	4.32	2	22
Amount of seed (Kg)	1188.00	622.034	288	3168
Fertilizer usage (Kg)	1131.79	647.116	320	3520
Pesticide uses (Kg)	2.14	0.507	1	5
Capital cost (Rs)	19773.75	2583.122	14250	26000
Cost of machinery (Rs)	12790.42	1545.668	9750	17000
Age (Years)	42.01	9.262	25	72
Household(Numbers)	4.13	1.27	1	8
Education (Years)	7.97	2.463	1	12
Farm experience (Years)	19.02	9.303	2	50
Farm income (Rs)	8366.67	3543.092	3000	18000
Amount of saving (Rs)	1241.67	1362.745	0	6000
Amount of loan (Rs)	219000.00	280397.077	0	1500000

Source: Estimated by authors, 2019/2020

In addition to the output and inputs, selected demographic and economic characteristics also explained in terms of descriptive statistics. Among the demographic characters, average age of the farmer is 42 years old with the minimum age of 25 and maximum age of 72 which indicates that a typical farmer was within the economically active age group in the study area.

On average, the members of the family are nearly 4 reveals that the household member could offer farm labour to their paddy cultivation and in case of their education, they spend nearly 8 years for it with a maximum year of 12 in the sample. The farmers have nearly 19 years of experience in farming with economic facilities such as, farm income, saving and loan facilities showing that there is a high variability of farm experience

among the farmers in the study area.

Table 02 presents the estimated means of Hicks – Moorsteen total factor productivity index and its decompositions in the selected 120 paddy farmers in the study area. Among the components of

Hicks – Moorsteen index, 94% of the highest mean value was attained in ITE followed by 93% of efficiency was attained in OSE. On average, 56% of efficiency was recorded in TFPE followed by 59% of efficiency attained in RISE and ISME.

**Table 2: Descriptive statistics of Hicks – Moorsteen indices and its components**

Indices	Minimum	Maximum	Mean	Standard deviation
TFP	0.3706	1.0000	.821227	.1683046
TFPE	0.1907	1.0000	.569827	.2376987
OTE	0.4840	1.0000	.861037	.1411351
ROSE	0.2146	1.0000	.651733	.2220861
OSME	0.2146	1.0000	.651733	.2220861
ITE	0.7657	1.0000	.946727	.0551790
OSE	0.6222	1.0000	.932136	.0665788
ISE	0.4834	1.0000	.845092	.1299044
RISE	0.2041	1.0000	.599936	.2411490
ISME	0.2041	1.0000	.599936	.2411490
RME	0.2352	1.0000	.692735	.2130906

Source: Estimated by authors using DPIN 2.1.

To examine the impact of selected demographic, farming and environmental factors on total factor productive efficiency (TFPE), Tobit regression was estimated where the TFPE taken as dependent variable in the study. The estimated results of the model are given in Table 03.

**Table 3: Determinants of Hicks – Moorsteen total factor productive efficiency index**

Variables	Coefficients	Standard error	t - ratio	Significant
Education	1.643	0.805	2.04	0.044
Farm experience	-0.409	0.233	-1.75	0.083
Household size	2.032	1.606	1.27	0.208
Gender	-6.752	4.315	-1.56	0.121
Ownership of land	-4.919	4.221	-1.17	0.246
Training	-10.013	5.030	-1.99	0.049
Extension services	0.439	4.145	0.11	0.916
Amount of saving	0.003	0.0016	1.86	0.066
Loan amount	0.00004	7.76e-06	1.81	0.074
Quality of land	10.092	6.656	1.52	0.132
Farm income	0.0014	0.0008	1.75	0.082
Destroy	-8.734	4.281	-2.04	0.044
Constant	40.153	13.211	3.04	0.003
Number of observations	120			
LR Chi – square (12)	28.46			
Probability > Chi – square	0.0047			
Pseudo R <sup>2</sup>	0.026			
Log likelihood	-533.286			

Source: Estimated by authors using Stata 13.

In the above Table 3, LR Chi – square for the model is 28.46 and, significant at 1% probability levels, implying that the Tobit model is the best fit and appropriate for the specified equation and, the estimated coefficients in the model are different from zero. The variables namely education, training and

destroyed the crops were significant whereas farm experience, amount of saving, loan amount and income earns from farming were significant influence on total factor productive efficiency at 5% and 10% levels respectively. Rest of other variables were insignificant in the model to determine the

total factor productive efficiency of paddy farms in the study area. The estimated coefficient for education has positive impact on total factor productive efficiency and it is significant at 5% probability level implies that educated farmers were more technical efficiency and productive efficiency in the use of their inputs to maximize output than uneducated farmers. The estimated coefficients of farm experience have negative impact on total factor productive efficiency of paddy farming which is statically significant at 10%. Even the farmers have more years of experience in farming, due to their older age and physical conditions, they may be unable to do their farming effectively and thus its efficiency becomes negative in the study. The coefficient of training has

### **3.2 Results of two – stage input-oriented DEA approach**

In addition to the Hicks – Moorsteen total factor productivity approach, this study also applied DEAP 2.1 program to estimate the technical efficiency of paddy farms using two – stage DEA approach and based on that overall technical efficiency, various returns to scale and scale efficiency scores

negative and it is significant at 5% level shows that even the farmers undergone a training, it not helps to increase their efficiency of paddy farms in the district. The coefficients for amount of saving, loan amount and income from farming have positively influence on total factor productive efficiency with 10% significant levels. This reveals that farmers have these facilities will be able to procure the required quantity of farm inputs at the right time, thus, enhancing their total factor productivity and efficiency. Destroyed of their paddy by any natural disaster was found to have negative influence on total factor productive efficiency and it was significant at 5% level. If their paddy yield destroyed by the natural disaster, it will reduce their productivity and efficiency.

were measured in the study. In the beginning, output is the paddy yield and seven inputs such as costs of labour, costs of capital, machinery costs, seed costs, fertilizer costs and pesticide costs with size of land were used to analyse them in terms of mean and standard deviation. The descriptive statistics of the output and inputs depicted in Table 04.

**Table 4: Summary statistics of output and inputs of paddy farms**

Variables	Mean	Standard deviation	Minimum	Maximum
Output of paddy (Kg per acre)	18602.40	9907.838	5040	52560
Labour cost (Rs)	13346.67	2747.495	8800	20000
Cost of capital (Rs)	19773.75	2583.122	14250	26000
Seed cost (Rs)	2201.25	395.535	1700	2800
Cost of fertilizer (Rs)	1219.62	216.988	875	1820
Cost of pesticide (Rs)	1674.79	451.800	725	3475
Cost of Herbicide(Rs)	1309.79	422.419	375	2650
Cost of transport (Rs)	1920.83	612.368	1000	4000

Source: Authors' calculation, 2020.

According to the Table 04, it describes the basic statistics of paddy yield, its inputs and the selected demographic, economic, farming and environmental characteristics used in the efficiency measures. The average paddy production was 18,602Kgs with a range of minimum 5040 Kg up to maximum 52560Kg in the study area. Labour measured terms of cost which are used as family and hired workers in paddy production activities. All inputs used in the study were measured

in rupees except land size and according to that, the mean value for fertilizer cost is 1131.79 which varies from 320 to 3520. The average size of paddy cultivated land is 8.25 acres with a range of 2 and 22 acres implies that rural farm households were indeed operating with quite larger land holdings in this survey area.

In addition to the descriptive statistics, frequency of selected variables also analysed and its results were given in Table 05.

**Table 5: Frequency of selected variables**

Variables	Frequency	Percentage
Gender		
Male	60	50
Female	60	50
Training		
Yes	69	57.5
No	51	42.5
Extension		
Yes	55	45.8

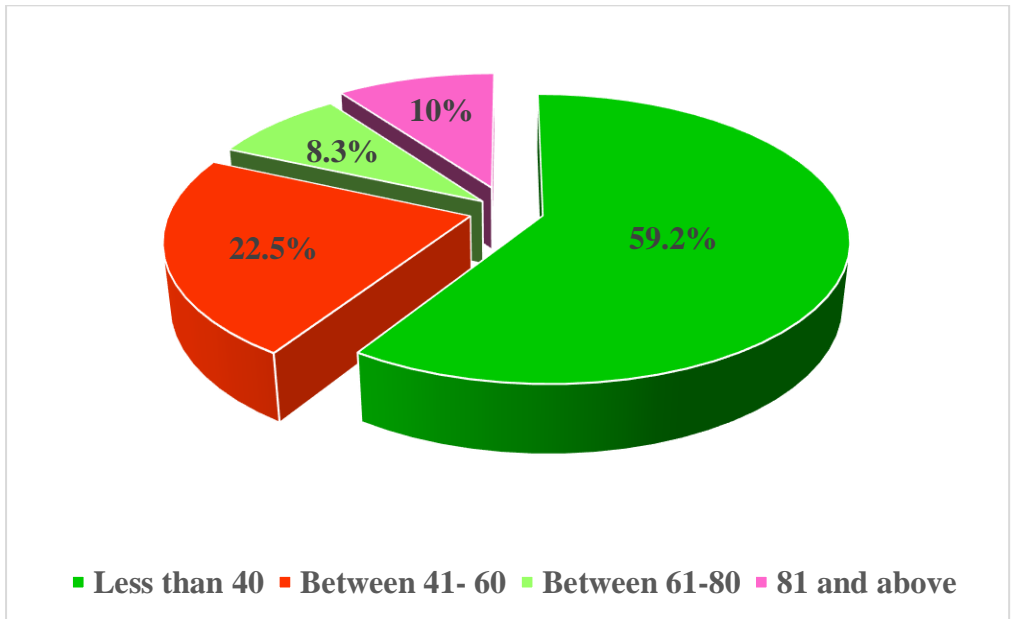
No	65	54.2
Credit		
Yes	70	58.3
No	50	41.7
Land quality		
Yes	24	20
No	96	80
Destroy the crops by natural disaster		
Yes	82	68.3
No	38	31.7

Source: Authors' calculation, 2020.

The above results suggest that male and female farmers are equal in the sample and 57.5% of them have training opportunities and rest of them don't have it. 45.8% of the farmers have opportunities to get extension services where as 54.2% of them don't have such facilities in the study area. In case of credit facilities, 58% of them have access to credit while rest of them don't it.

To estimate the technical efficiency of selected paddy farmers in the study area, terms

of CRS, VRS and scale efficiency, two stage input-oriented DEA analysis was employed using the computer program DEA 2.1, developed by Coelli *et al.*, (1996). In the beginning, overall technical efficiency (Constant returns to scale) was measured in terms of percentage using pie chart and according to that 59.2% of the farmers attain less than 40% efficiency scores while only 10% of them attained the efficiency scores 81% and above.



**Figure 1: Frequency of overall technical efficiency (CRS) ranges**

The following table illustrates the distribution of technical efficiency in terms of CRS, VRS

and scale efficiency and its frequencies given in the Table 03.

**Table 6: Distribution of DEA technical efficiency ranges**

Range	CRS		VRS		SE	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Less than 40	71	59.2	2	1.7	67	55.8
Between 41-60	27	22.5	12	10.0	29	24.2
Between 61-80	10	8.3	....	....	12	10.0
81 and above	12	10.0	106	88.3	12	10.0

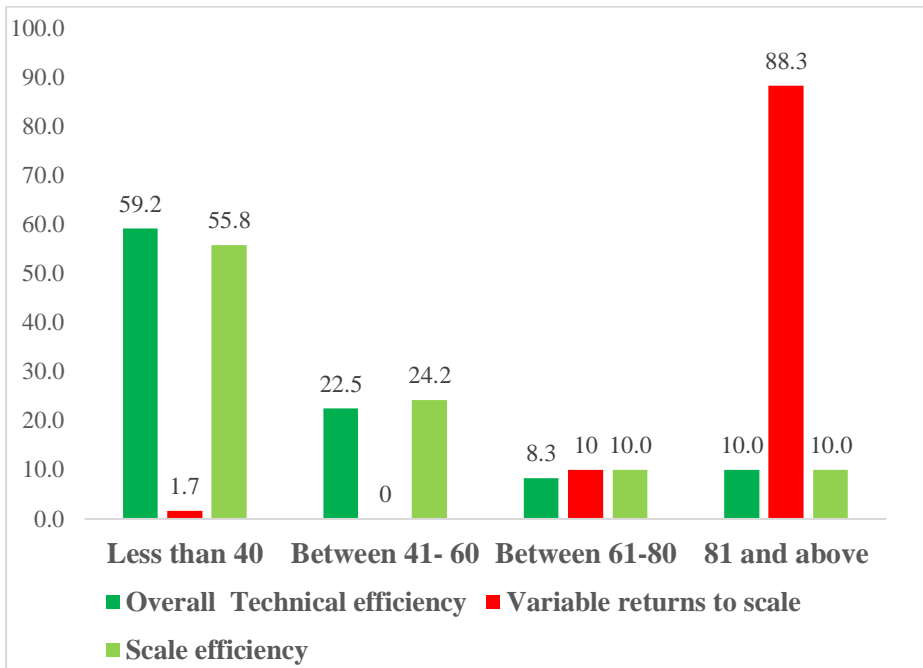
Source: Authors' calculation using Frontier 4.1, 2020.



As shown in the above Table, 55.8% of the farmers belong to the scale efficiency less than 40% and only 10% of them attained their VRS efficiency between 41 and 60, but no one attained this efficiency between 61 and 80 in the study. Nearly 88% of the

farmers attained more than 81% of VRS efficiency whereas 10% of them attained CRS and scale efficiencies.

The above results were given in the following figure using bar chart as below.



**Figure 2: Frequency of all efficiency ranges**

The study used input –oriented DEA model for estimating overall technical efficiency ( $TE_{CRS}$ ), pure technical ( $TE_{VRS}$ ) and scale efficiencies for paddy farms in Mullaitivu district of Sri Lanka. Table 07 represents the mean and standard deviation of the above efficiencies of paddy farms and according to that, on average the overall technical efficiency of

paddy farms was nearly 42%, scale efficiency was nearly 45% and very high VRS technical efficiency was nearly 93%. The result of overall technical efficiency score indicated that the farmers could reduce their use of inputs by almost 58% and still obtain the same paddy production. Specially, the splitting of the technical

efficiency measure produced estimates of 7% of pure technical inefficiency and 55% scale inefficiency. By eliminating scale

inefficiency, farmers can improve their efficiency score from 42% to 93%.

**Table 7: Descriptive statistics of the efficiency**

Efficiency	Mean	Standard deviation	Minimum	Maximum
Overall technical efficiency	41.90	22.19	11.30	100.00
VRS technical efficiency	92.80	14.72	0.00	100.00
Scale efficiency	45.20	22.95	11.30	100.00

Source: Authors' calculation using Frontier 4.1, 2020.

Scale efficiency indicates whether any efficiency can be obtained by improving the size of the operation and the scale efficiency is low with an average of 45% indicating that the majority of the paddy farmers are operating far from their optimal size. Thus, a low level of scale efficiency represents a high scope for improvement in farm size to increase the efficiencies. It can be seen that scale efficiency was relatively low (45.2%) and only 12% of them achieved scale efficiency 81% and above showing that most of these farmers were operating very far from the optimal size. Compared to the overall and scale efficiencies, pure technical efficiency (VRS<sub>TE</sub>) was relatively high suggest that main cause of low technical efficiency for paddy farmers is scale efficiency. In general, the cause of inefficiency may have been either inappropriate scale or misallocation of resources.

Inappropriate scale suggests that the farm is not taking advantage of economies of scale whereas misallocation of resources refers to inefficient of input combinations. In this study, pure technical efficiency was relatively high, but scale efficiency was low proves that efficiencies were mainly due to the inappropriate scale than improper input used (Oren and Alemdar, 2006).

### 3.2.1 Returns to scale of sampled farmers

In addition to analysing the extent of efficiencies or paddy cultivators, it is also very important to identify the distribution of paddy cultivators to fall in three stages of production frontier.

Differences in returns to scale of paddy farmers are shown different returns to scale characteristics as shown in Table 08.

**Table 8: Returns to scale of the farmers**

Returns to scale	Number of farmers	Percentage of the farmers
Increasing returns	112	93.3
Decreasing returns	01	0.8
Constant returns	07	5.8

Source: Authors' calculation using Frontier 4.1, 2020.

Out of 120 farmers, 112 of them (93.3%) were found to be operating at increasing returns to scale implies that paddy output is increasing by more than the proportional change in the inputs used in the study (Table 8). It means that most of the paddy cultivators were operating in sub-optimal region of the production frontier. Only 0.8% of the farmers are producing paddy at decreasing returns to scale, indicating that their paddy output increases by less than

proportional change in inputs. Since 0.8% of the paddy cultivators were operating pre-optimal region of the production frontier described that, the situation of paddy farmers cultivating their paddy below the optimal scale of production. Remaining 5.8% of proportionally increasing with the increasing paddy inputs where those farmers are in the optimal region of production frontier.

**Table 9: Results of independent samples t-test**

Variables	Mean		
	Overall technical efficiency	VRS technical efficiency	Scale efficiency
Gender			
Male	43.39	40.70	90.87
Female	46.57	43.02	91.41
Ownership of land <sup>***(a)</sup>			
Own	49.59	46.60	94.11
Tenant	38.07	34.75	86.68
Training <sup>***(b)</sup>			
Yes	49.94	46.46	91.36
No	38.27	35.64	90.84

Extension			
Yes	46.01	43.36	90.80
No	44.11	40.59	91.42
Credit			
Yes	44.25	40.89	90.66
No	46.00	43.20	91.81
Land quality <sup>***(c)</sup>			
Yes	64.33	61.04	93.60
No	40.14	37.06	90.52
Destroy <sup>** (d)</sup>			
Yes	43.95	41.45	93.40
No	47.21	42.75	86.27

Note: \*\*\* and \*\* represents 1%, 5% significant levels respectively.

(a) Represents ownership of land is significant for all three efficiencies.

(b) Represents training is significant only for all overall TE and scale efficiencies.

(c) Represents land quality is significant only for all overall TE and scale efficiencies.

(d) Represents destroy is significant only for VRS technical efficiency.

The slack of inputs variables in terms of mean were illustrated in Table 10 and according to that, cost of capital has the highest slack followed by costs of labour and fertilizer. Among them, seed cost has less slack which means that most of the seed were used in the farming and they need to pay additional cost when they purchase additional seed.

**Table 10: Slack of inputs variables**

Variables	Mean slack
Cost of labour (Rs)	366.81
Cost of capital (Rs)	816.24
Machinery cost (Rs)	163.36
Cost of seed (Rs)	45.09
Fertilizer cost (Rs)	225.40
Cost of pesticide	156.73
Size of land	156.28

Source: Authors' calculation using Frontier 4.1, 2020.

The results further explained that, a farmer can reduce the above costs of inputs by their slack quantities without decreasing the existing output to become efficient. As the overall technical efficiency score measured as 42% further reveals that, there is a need to reduce the above cost of inputs by 58% to attain the efficiency in paddy farming.

### **3.3 Results of Tobit model: Factors affecting VRS-DEA technical efficiency**

The estimated results of the Tobit regression coefficients and average marginal effects of three explanatory variables on the components of technical efficiency such as technical efficiency, pure technical efficiency and scale efficiency are shown in Table 11. The overall technical efficiency, pure technical efficiency and scale efficiency were taken as three

dependent variables separately which are regressed on demographic and farming characters in the Tobit model. The overall significance of the Tobit model can be tested using Pseudo  $R^2$  value and it is significant at 1% and 5% levels implies that to explain the impact of selected demographic and farming characters on overall technical efficiency, pure technical efficiency and scale efficiency, the estimated Tobit model is adequate one. The results show that, education, land ownership, amount of savings, loan size, land quality and farm income were found to have positively significant impact on overall technical efficiency while experience, ownership of land, amount of savings and destroy of the land significantly influenced on pure technical efficiency in the study. On the other hand, scale efficiency of paddy farming mostly influenced by education, ownership of land, saving amount, loan size, quality of land and farm income.

**Table 11: Results of Tobit model in determining efficiencies**

Variables	Overall technical efficiency		Pure technical efficiency		Scale efficiency	
	Coefficients	Average marginal effects	Coefficients	Average marginal effects	Coefficients	Average marginal effects
Education	1.483** (.615)	0.315	-0.450 (.501)	-0.039	1.612** (.641)	0.315
Experience	-0.163 (.178)	-0.087	-0.356** (0.145)	-0.076	-0.147 (.186)	-0.072
Family size	1.002 (1.22)	0.114	0.121 (0.999)	0.005	1.283 (1.28)	0.134
Gender	-2.902 (3.29)	-0.041	0.459 (2.684)	0.002	-3.812 (3.43)	-0.05
Land ownership	9.042*** (3.22)	0.130	5.508** (2.62)	0.035	8.887*** (3.36)	0.119
Training	-4.257 (3.85)	-0.060	1.465 (3.13)	0.009	-4.496 (4.02)	-0.058
Extension	2.101 (3.17)	0.025	-1.186 (2.58)	-0.006	1.394 (3.30)	0.015
Saving	0.003*** (0.001)	0.109	-0.002** (0.001)	-0.029	0.003*** (0.001)	0.108
Loan size	0.00003*** (5.93e-06)	0.141	-3.45e-07 (4.83e-06)	-0.0008	0.00003*** (6.18e-06)	0.132
Land quality	14.992* ** (5.08)	0.050	4.903 (4.14)	0.010	13.763** (5.30)	0.044
Farm income	0.0017* ** (0.0006)	0.369	0.00002 (0.0005)	0.001	0.002*** (0.0006)	0.386
Destroy	0.353 (3.275)	0.006	6.607** (2.66)	0.048	-1.472 (3.41)	-0.026
Constant	-2.66 (10.1)	.....	94.06 (8.22)	.....	-	.....
Pseudo R <sup>2</sup>	0.070***		0.030**		1.931(10.52)	
LR Chi -					0.068***	

square	76.15		29.41		74.46	
Log likelihood	-501.17		-476.08		-506.11	

Source: Authors' calculation using Stata 13, 2020.

Note: \*\*\* and \*\* represents 1% and 5% levels of significant respectively. Standard errors are in the parentheses.

The coefficient of education was positive and significant at 5% level on both overall and scale efficiency which is the expected result confirming the important role of education in efficiency improvements. This results suggests that, paddy farmers with higher education level tend to attain higher technical efficiency in their farming. The findings of this study was consistent with the findings illustrated by Tien, Thong (2014) and Shamsudin (2014). Further, the farmers who are more educated expected to have a better understanding of modern technologies which often tend to have better managerial expertise and thus they are more likely to be efficient than less educated farmers. The coefficient of average marginal effect for education was found to be 0.315 with positive sign on both overall technical efficiency and scale efficiency reveals that as farmers' education increases by one more year, those efficiencies would increase by 31.5%. The above findings summarized that, ownership of land and amount of saving are the major three factors determine all three efficiency levels whereas destroy of land

only significant on pure technical efficiency in the study.

Experience in farming has negative sign in pure technical efficiency shows that, as framers' experience in farming increases by one more year, would reduce the pure efficiency and its average marginal effect suggest that, the pure technical efficiency will reduce by 7.6%. Although, faming experience was insignificant in other two efficiencies in the study. This result contradicted with the earlier studies done by Umar Mukhtaret *al*, (2018). Another farming character is the ownership of land whether the farmers are cultivating the paddy on their own land or tenant positively influencing all three efficiency scores at 1% and % significant levels. This means that, own land farmers are more technically efficient in terms of overall, pure and scale than tenant farmers in the study. The farmers who have cultivating paddy in their own land, will motivate them to adopt new farm management practices and techniques for increase their efficiency compared to the tenant cultivators. The average marginal

effects for overall technical efficiency is 0.130 while pure technical efficiency and scale efficiency have 0.035 and 0.119 respectively implies that, the farmers who have own land in their paddy farming, overall technical efficiency will increase by 13%, pure and scale efficiencies will increase by 3.5% and 11.9% respectively. These results are opposite to those reported by Shamsheerul and IsmetBoz (2019) which indicated that rented land rice farmers have higher technical efficiency than leased or own land farmers in the study. The farmers who have more savings, their overall technical efficiency and scale efficiency will be more and pure efficiency will be lower than the farmers who have less saving in the study. Because, saving is the major financial tool for increasing the efficiency of paddy farms by adopting new production techniques in farming. The coefficient of loan size has positively significant impact on overall technical efficiency and scale efficiency and their average effects have 0.141 and 0.132. It reveals that as loan size increases overall technical efficiency and scale efficiency score will be increased by 14.1% and 13.2% respectively. However, pure technical efficiency not influenced by the loan size in the study. Land quality and farm income also positively significant impact on overall and scale efficiencies but it is insignificant in pure technical efficiency in the

model indicates that the farmers who maintain their land quality and who earns more income from farming, their efficiency will be more than their counterparts. Finally, the coefficient of destroy has positive impact on pure technical efficiency at 5% level and it was not significant in other two efficiencies in the study.

#### 4. CONCLUSION

In this study, technical efficiency and its decompositions were estimated using non - parametric approach among 200 selected paddy farmers in Mullaitivu district. Two analytical tools under non - parametric approaches namely *Hicks - Moorsteen total factor productivity index* and *two - stage input-oriented data envelopment* were employed in the study. Results derived from Hicks - Moorsteen index suggested that among the components of Hicks - Moorsteen index, 94% of the highest mean value was attained in ITE followed by 93% of efficiency was attained in OSE. On average, 56% of efficiency was recorded in TFPE followed by 59% of efficiency attained in RISE and ISME. Tobit model was applied to examine the impact of demographic, economic, farming and environmental factors on total factor productive efficiency index and its results revealed that education, training and crop destruction due to changes in climate were



significant whereas farm experience, amount of saving, loan amount and income earns from farming were significant influence on total factor productive efficiency at 5% and 10% levels respectively. Rest of other variables were not significant in the model to explain the total factor productive efficiency of paddy farms in the study area.

In addition to the Hicks – Moorsteen total factor productivity approach, two – stage DEA also applied to estimate the technical efficiency and explore the factors influencing the efficiency of paddy farmers in the study. The estimated results indicate that on average the overall technical efficiency of paddy farms was nearly 42% indicated that the farmers could reduce their use of inputs by almost 58% and still obtaining the same paddy production. Specially, the farmers could improve their efficiency from 42% to 93% by eliminating their scale inefficiency. Estimated results of Tobit model showed that both overall technical efficiency and scale efficiency positively influenced by education of the farmer while experience in farming positively impact on pure technical efficiency. Also, land ownership has a positive impact on overall

technical efficiency, pure technical efficiency and scale efficiency in the study.

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### **Abbreviation**

DEA: Data Envelopment Analysis

HMTFPI: Hicks – Moorsteen Total Factor Productivity Index

DMU: Decision Making Units

TFPE: Total Factor Productivity Efficiency

ITE: Input Oriented Technical Efficiency

OSE: Output-Oriented Scale Efficiency

RISE: Residual Input Oriented Scale Efficiency

ISME: Input Oriented Scale Mix Efficiency

CRS: Constant Returns to Scale

VRS: Variability Returns to Scale

TE<sub>CRS</sub> : Constant Returns to Scale Technical Efficiency

TE<sub>VRS</sub>: Variability Returns to Scale Technical Efficiency

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