JOURNAL OF RAJARATA ECONOMIC REVIEW

Volume 1   **Number 1**   **December 2021**

Department of Economics

Faculty of Social Sciences and Humanities

Rajarata University of Sri Lanka

Mihintale, Sri Lanka.

2021

JOURNAL OF RAJARATA ECONOMIC REVIEW

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Contents

EDITORIAL NOTE

COVID-19 and Sri Lankan SMEs

The COVID-19 pandemic has undeniably left an indelible mark on global economies, affecting nations both large and small. Sri Lanka, too, grappled with the repercussions of the virus, facing challenges that rippled across various sectors. Among those significantly impacted were the Small and Medium Enterprises (SMEs), the lifeblood of any robust economy.

The timeline of the pandemic in Sri Lanka closely mirrors the global trajectory, with the first local case reported in March 2020. The World Health Organization's swift declaration of COVID-19 as a global pandemic on the same day emphasized the severity of the situation. As the country faced successive waves, particularly grappling with the Omicron and Delta variants, measures such as travel restrictions and remote working became imperative, profoundly affecting business processes on a global and local scale.

SMEs play a pivotal role in economies, acting as resilient pillars that fortify nations during economic downturns and contribute substantially to growth during periods of prosperity. In Sri Lanka, SMEs are intricately linked with entrepreneurial innovation, societal advancement, and employment generation. The sector accounts for a significant portion of the GDP, contributing 52%, and employs 45% of the workforce. During the pandemic, the adaptive nature of SMEs, leveraging social capital and family labor, allowed them to weather the storm more effectively than larger economic entities.

However, despite their resilience, Sri Lankan SMEs face formidable challenges. The country's status as a developing nation presents hurdles in acquiring cutting-edge technologies and essential resources during crises. A critical challenge lies in the lack of favorable macroeconomic policies, hindering the equitable allocation of scarce resources. The reliance on informal funding sources due to complex and time-consuming processes within formal financial institutions poses a risk, potentially fostering a continued hesitancy towards the formal financial sector.

In light of these challenges, we propose policy recommendations to rejuvenate the SME sector in Sri Lanka. A concerted effort is needed to develop and implement favorable macroeconomic policies that enhance productivity within the SME landscape. The government should play a proactive role in providing support to uplift the living standards of its citizens, particularly those in the low-income category who have been disproportionately affected by the crisis. Recognizing SMEs as a potent solution to economic downturns

and as crucial elements for maintaining national sovereignty, policymakers must focus their efforts on this sector to mitigate the adverse effects stemming from the pandemic.

In conclusion, the resilience of SMEs is a testament to their vital role in the economic fabric of Sri Lanka. Addressing their challenges and bolstering their growth will not only contribute to the nation's recovery from the COVID-19 pandemic but also pave the way for sustainable economic development in the post-pandemic era. The collaborative efforts of regulators, governing bodies, and the private sector are imperative in ensuring the continued success and vitality of Sri Lankan SMEs.

Editor in Chief
Prof. S.K.N. Gamage
Professor in Economics,
Department of Economics,
Faculty of Social Sciences and Humanities, Rajarata University of Sri Lanka.
Journal of Rajarata Economic Review – (Vol. 1 No. 1)

Impact of Organizational Culture on Employee Motivation: A Study on Managerial Nurses in Children's Hospitals of Sri Lanka

Saman Yapa Bandara [1], Wasantha Athukorala [2], Sanjeewaka Kulathunga [3], Asangi Gannoruwa [4], Neelamani Hewageegana [5]*

[1] Lady Ridgeway Hospital for Children, Colombo 08, Sri Lanka, 01000.

[2] Faculty of Arts, University of Peradeniya, Peradeniya, Sri Lanka, 20400.

[3] Faculty of Commerce and Management, University of Keleniya,11600

[4] Faculty of Technology, University of Sri Jayewardenepura, Homagama, Sri Lanka, 10200.

[5] Ministry of Health, Colombo 10, Sri Lanka, 01000.

* Correspondence: samanyapabandara@gmail.com

Abstract

Organizational culture is a common set of values and norms expressed by individuals and groups within an organization. It has become one of the most important motivating factors in current businesses. This hospital-based cross-sectional study aimed at identifying the impact of organizational culture on employee motivation in the two children's hospitals in Sri Lanka. The research investigated the level of perception of managerial nurses (matrons, sisters and in-charge nurses) and how the different aspects of organizational culture such as values, norms, and leadership styles, influence on motivation of workers. Pearson correlation coefficient (r) between the employee motivation and organizational culture as well as multiple linear regression model were employed with relevant statistical tests. The correlation analysis shows a positive relationship between employees' motivation and the organizational culture. The regression results showed that the norms and leadership styles are highly significant on determining the employees' motivation. Further investigation of this study reveals that variables such as salaries, rewards, leadership quality and recognition are the main determinants of job satisfaction while gender, age and marital status are not found to be significant. Accordingly, authorities should take necessary steps to adjusting organizational culture for employees' motivation while increasing their satisfaction level which ultimately increases the efficiency and effectiveness of children hospitals and improve patient care at pediatric hospitals in Sri Lanka.

Keywords: *Health care workers; leadership styles; motivation; organizational culture*

1. Introduction

The health system of Sri Lanka includes a variety of medical systems such as Traditional, Western, Ayurvedic, Unani, Siddha, Homeopathic and Acupuncture. However, primary health care need is provided mainly by western or allopathic medical system. Allopathic medicine offers a wide variety of healthcare facilities within safety net with a large network of both government and private healthcare organizations. The private sector gives all kinds of care at a cost to the patients, while free health services are given to all citizens by the public sector. In the public health system, two parallel public (preventive) and curative services are responsible for provision of the care. In this context, preventive health services

are concentrated in public health services while the curative services are provided through a network of hospitals (Ministry of Health, 2018). As a transitional country from a lower middle-income country to an upper middle-income country, Sri Lanka has achieved remarkable progress in maternal and, child health, despite control of communicable diseases. Maternal mortality rate of 33.8 per 100,000 live births, infant mortality rate of 9 per 1,000 live births, and a life expectancy at birth of 75.3 years, explain the extent of achievement in South Asia (World Bank. 2021).

Organizational culture is considered to be the personality of an organization and consists of the beliefs, principles, standards and visible signs (artifacts). It has a greater impact on the actions of employees ultimately leads to overall performance of a company (Deal, T. and Kennedy, A., 1983). It is evident that organizational culture is an important phenomenon that has considerably impacts on employees' mental state and behavior. In addition, organizational culture is an intangible manifestation of nature of the organization to its stakeholders. As an internal stakeholder, every employee is keenly interested in organizational environment, where, they have to perform (Rakowska and Dermol, 2014). Human resource (HR) management is the strategic approach to the management of the most valued assets of an organization which help individually and collectively to achieve business or organizational objectives. It is an ultimate responsibility of an HR Manager to keep motivated employees within an organization while ascertaining suitable motivational factors within and outside the organizational environment and use the ascertained motivators to enhance the motivation level of organizational personnel towards achievement of its objectives (Fahim, 2018).

This study assessed whether there was a real impact of organizational culture on employee motivation among managerial nurses in children's hospitals of Sri Lanka. Accordingly, this study explained socio demographic factors, nature of organizational culture, and level of motivation among managerial nurses in the children's hospitals: Lady Ridgeway Hospital for Children (LRH) and Sirimavo Bandaranaike Special Children's Hospital (SBSCH) in Sri Lanka. The Lady Ridgeway Hospital for Children is located in Colombo with over 1000 patient beds, and considered to be the largest children's hospital in South Asia. Services are delivered free of charge at the point of delivery in compliance with the Government health policy. Approximately 2,500 to 3,000 children are treated every day, on average. (LRH, 2021)

SBSCH is the second pediatric hospital to provide specialized medical treatment using advanced technology, to children (SBSCH 2021). The two hospitals provide services for children under the age of 14 years. There were 1,300 nurses in the two government children's hospitals in Sri Lanka. Among them there were only 75 managerial level nurses working in these hospitals as matrons, sisters and nursing in-charge. Furthermore, using a self-administered questionnaire, the effect of organizational culture on employee motivation was quantitatively assessed. To the best of our knowledge, no previous studies had attempted to investigate the relationship between organizational culture and employees' motivation in children's hospitals of Sri Lanka. Therefore, carrying out a study like this focusing health sector where there are many different kinds of employees are found, will provide valuable information to make necessary policies in this field. Accordingly, the main objective of the study is to analyze the important variables which represent organizational culture on employees' motivation in children's hospitals in Sri Lanka. It also investigated the

determinants of job satisfaction among employees and whether the job satisfaction affects the employees' performance in the children's health care sector. The main research question that is investigated in this study are (1) what the existing level of motivations among the different categories of health-related workers is, (2) what components of organizational culture have positive impacts on the level of motivation and (3) what the determinants of the satisfaction level of the health sector workers in are children hospitals.

2. Literature Review

Organizational culture includes values, norms, artefacts, and leadership styles. Organizational principles identify acceptable standards that govern the actions or behavior of individuals within the organization which comes under the value. Without these principles, people can treat themselves according to their own value systems that can contribute to actions that the company does not wish to promote. The higher the value, the more acts they will influence. However, implicit values that are deeply integrated with the culture of an organization and strengthened by management behavior may not influence idealistic values that are not expressed as management. It is a 'use attribute' that is essential and drives desired behavior. Some of the most typical areas in which values can be expressed implicitly or explicitly, are performance, competitiveness, innovation, competence, teamwork, quality and customer service (Hogan and Coote, 2014; Asriadi, 2019; Suharto and Nusantoro, 2018).

Norms are learned, understood mutually and held as past memories. They are followed by people with different degrees of consciousness. (Fleetwood, S. 2019). Heinrich Popitz defines norms as "those expected forms of regular behaviour whose absence or violation causes social sanctions" People understand a norm when they face or expect sanctions from a result of violation of norm, or when they witness violations by others (Popitz, 2017). Behavioral aspects of norms refer many cognitive, affective, social and legal motivations and restrictions are shaping human behavior. To understand particular social classes, as well as human society as a whole, it is important to examine driving forces of action. Many research articles offer different but complementary information from the field of psychology, law, social science, the political science, education and others (Kelly and Davis, 2018). Artefact is considered to be visible and tangible aspects of an entity that people hear, see or feel. The items such as the working environment, sound and vocabulary used in letters or memoranda, the way people talk to each other at meetings or by telephone and the welcome or lack of welcome offered to the visitors may be considered artifacts (Kassel, 2010). Further, the leadership style explains how managers interact with their staff. Broadly, there are many leadership types such autocratic/democratic, charismatic/non-charismatic, enablers/controller and transactional/ transformational (Al-Khaldi, 2020; Mahajan, 2011). According to Hofstede (2001) organizational culture can be described by six dimensions as Power Distance, Uncertainty Avoidance, Individualism/Collectivism, Masculinity/Femininity, Long/Short Term Orientation, and Indulgence/Restraint (Hofstede, 2001).

Just as having a strong personality to an individual of his image, the organizational culture gives an organization an identity. It leads to cooperation between workers, as they share the principal features and gives the team spirit in their organizational culture (Cheung, Wong and Wu, 2011). suggested the role conflict, the leadership in health workers, the relationship with the supervisors, the autonomy and stress, as variables correlated with job satisfaction.

(Sakellaropoulos, 2006) studied the nursing staff of the two largest hospitals of Patras, observed in relation to the job satisfaction of the workers, moderate emotional exhaustion, and high exhaustion by the lack of personal achievements and high depersonalization. (Sakellaropoulos, 2006).

Motivation of workers in an organization is an important factor that determines organizational performance and productivity (Osabiya, 2015). Motivation represents unsatisfied needs which create a state of tension or disequilibrium, causing the individual to move in a goal directed pattern towards restoring a state of equilibrium by satisfying the need (Benimoff and Horrocks, 1961). For this reason, it is obvious that motivation of employees is one of today's major activities. Nevertheless, organizations can't achieve their objectives without fulfilling employee requirements and level of motivation (Sabir, 2017). Practically there are many theories of motivation. They are of main two types as content theories and process theories. The content theories emphasize more about the general characteristics of people, but do not try to make individual differences possible. Maslow's motivation theory is the most well-known classification of need theory (Maslow, 1943). He suggests that five main categories of needs apply to people in general, based on the fundamental physiological needs and leading to a hierarchical order between security, social, respect needs and needs for self-satisfaction and self-actualization Accordingly, when all needs of a person are met at a given time, the most important needs are urgently needed. One of the implications of Maslow's theory is that higher demands for satisfaction and self-actualization provide the most stimulus of motivation–when fulfilled, strengths develop, and less fulfilling needs decline. Maslow's need hierarchy was very influential, but empirical research has not confirmed it and its apparent inflexibility have been criticized (Maslow, 1943; Neher, 1991) According to the review of studies, it is clear that there is no common agreement of the argument in this field. Therefore, this study will partly fill this void in the literature.

3. Research Methodology

Hospital-based descriptive cross-sectional study was conducted to assess the influence of organizational culture on motivation of managerial nurses, identifying the sub-dimensions of organizational culture as organization values, norms and leadership styles. There were only 75 managerial level nurses working in these hospitals as matrons, sisters and in-charge nurse. They all were included in the study but, out of them four (4) did not participate in the study. Figure 1 shows the basic structure of the independent and dependent variables.

Independent Variables	Dependent variable
Organizational culture	
Values	
Norms ⟹	Employee Motivation
Leadership style	
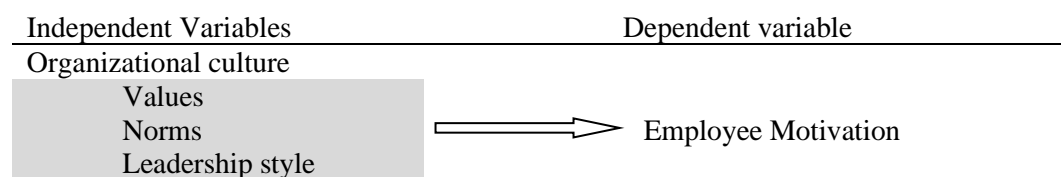
Figure 1: Conceptual Framework of the Study

From the study, organizational culture was considered to be the independent variable while the employee motivation was considered to be dependent (outcome) variable. Relevant data gathered from two main children's hospitals LRH and SBSCH in Sri Lanka through self-administered questionnaire. Main areas, covered in this study were socio-demographic factors, the nature of organizational culture, the level of motivation and the impact of

organizational culture on employees' motivation among managerial nurses in children's hospitals of Sri Lanka. Influence of organizational culture on motivation of workers, were assessed in sub-dimensions as, organization values, organizational norms, and leadership styles. The correlation between the organizational culture and degree of motivation of employees were also examined.

First, socioeconomic background of the group was assessed and then as measures of the independent variables, 15 questions were used to cover organizational culture and its sub-dimensions as values, norms and leadership styles (5 questions per each sub-section). The responses for the questions were all positive and the scores assigned to the Likert scales ranged from 1 to 5. The level of understanding of culture has been calculated continuously using the cumulative scores within the range. The scores of respondents therefore felt into the range from 15 to 75. Then those variables were used to explain the views of the respondent on the organizational culture in the descriptive statistics. Two groups of respondents from the two hospitals were compared using student t test. Then linear regression model applied for organizational culture and level motivation of nurses considering as independent and dependent variable respectfully.

Motivation level is the dependent variable in this study. As the dependent variable, 10 questions were raised about the level of motivation of the respondent nursing officers. All questions were positive and the scores given according to the five-point Likert scale ranged from one to five. The range of cumulative scores was range between 10 and 50. The five levels of motivation were identified as highly motivated, motivated, and averagely motivated demotivated and highly demotivated. They were measured in a cumulating as shown in Figure 2 using the scores within the range.

The estimation of difference between each level of motivation: $(50-10)/5 = 8$

Figure 2. Continuum scores for the five levels of motivation
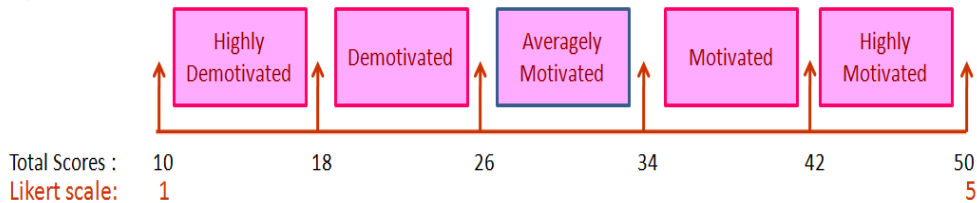
The continuum in Figure 2 shows that, if the total score of the respondent falls between 4 and 5, the employees are highly motivated and strongly agreed. When this ranges from 0 to 1, means a strong de-motivated worker. This variable has been described for the purpose of understanding the opinions of the respondent on the organizational culture.

The Data collected through the self-administrated questioner was analyzed using SPSS ver. 21 statistical software. Initially a univariate analysis was done and thereafter bivariate analysis of relevant variable was conducted. To describe statistical significance, student t-test was used to compare two hospitals against each other on organizational culture and motivational level of the nurses. The P value of ≤ 0.05 was used to identify statistical significance. As the final step a multiple regression model was used to test whether the components of the organizational culture have any impacts on the nurses' motivation level.

The statistical analysis calculated the averages and standard deviations of all variables for exploring the relationship between organizational culture and the employees' motivation. Study mainly used descriptive statistic methods that deal with the data organization, collection and presentation. Then an attempt was made to correlate the organizational culture type of the organization with the degree of employee motivation. In addition to analyses data using the qualitative methods, two multiple regressions models were used. The first model is investigating organization culture and the relevant variables as follows:

$$\mathbf{ML = \ \beta_0 + \beta_1 OV + \beta_2 ON + \beta_3 LS + U} \ldots \ldots \ldots \ldots \ldots \ldots (\mathbf{1})$$

The dependent variable of this model is the motivation level (ML) while independent variables are organizational value (OV), organizational norms (ON) and leadership style (LS). While βi provide the coefficients of each variable, U gives au the random error component. The second regression model identified the determinants of the employee's satisfaction which is given below.

$$\mathbf{ES = \ \alpha_0 + \alpha_1 S + \alpha_2 RV + \alpha_3 LQ + \alpha_4 RC + \ \alpha_5 G + \alpha_6 AG + U} \ldots \ldots \ldots \ldots \ldots (\mathbf{2})$$

The dependent variable (ES) in this model is a dummy variable which takes 1 if satisfied and 0 otherwise. Independent variables are as follows:

S is the salary (Rs. /Per month)

RV is the rewords (value of the additional benefits)

LQ is a dummy variable (1 if leadership quality in the work place is high, 0 otherwise)

RC is a dummy variable (1 if recognition in the work place is important, 0 otherwise)

G is a dummy variable (1 if male, 0 otherwise)

AG is the age of the employee (number)

We run the standard Logit and Probit models and finally Probit model is selected as it provides higher number of significant variables in the model.

4. Results and Discussion

In the sample, out of 71 participants 36.62% (n=26) were from SBSCH-Kandy and the rest from LRH- Colombo. From the participants only two (2.82%) were males, showing the almost all of nursing officers are female. This could be due to socio-cultural concerns like in most of the time children are looked after by their mothers while they are in wards, and fathers are generally not allowed to stay in these wards. Majority (39.44%) of the study group were in the age group of 51 to 55 while there were no nurses below 25 years of age. Further, 90.14% of the nursing officers were more than 40 years old indicating most of the managerial nursing posts are held by the senior, experience nurses, which is positive sign of hospital management. When considering the distribution of the participants it was found that 2.8% were matron, 38.03 % were sisters and 58.12 % were working as in charge nurses.

In the study only 4.23% had GCE O/L qualification while all others (95.77%) had GCE A/L qualification with 50.70% had diploma, 23.95% possessed a degree and 4.23% of the had postgraduate qualification as well. This shows that most of the participants at least had GCE A/L qualification which is a positive sign for future development of the care. When we

consider service in years, more than 50% of nurses have more than 20 years of experience, showing majority of the managerial nurses had been in the service for years and their experience is useful in hospital management. On the other hand, only 43.66 % had less than 5 years of experience.

Table 1 summarizes the responses on perception level toward organizational culture with respect to each hospital. 38.40% was agreed and 34.37% was strongly agreed while the responses for disagree and strongly disagree were 7.6 % and 1.33 % respectively. As a whole 89.11% of the total responses was positive perception towards organizational culture, implying that the employees are strongly satisfied with existing organizational culture. When the responses from the two hospitals were compared, 90.77% of the responses given from SBSCH-Kandy were positive and that for LRH-Colombo was 88.15%. Hence it is observed that the perception of the two hospitals were more or less similar.

Table 1: Frequency for perception on organizational culture

Scale Level	SBSCH Kandy		LRH Colombo		Total Population	
	N	%	n	%	n	%
Strongly Disagreed	5	1.28	21	3.11	26	2.44
Disagreed	31	7.95	59	8.74	90	8.45
Moderately Agreed	71	18.21	103	15.26	174	16.34
Agreed	167	42.82	242	35.85	409	38.40
Strongly Agreed	116	29.74	250	37.04	366	34.37
Total	390	100.00	675	100.00	1065	100.00

Table 2 summarizes the responses on level of motivation of nurses of the two hospitals. According to the Five Point Likert Scale data the majority of the responses were "5" with a 62.54%. Further the percentage of responses 1 and 2 in le Likert scale are 1.14% and 0.14% respectively. According to the employees' responses they are highly motivated. When we compare the two hospitals, participants of SBSCH –Kandy 98.84% were motivated and that of LRH – Colombo was 98.22%. This implies that the level employees' motivation is more or less similar in nature regardless of the hospital.

Table 2. Frequency table for motivation level

Scale Level	SBSCH Kandy		LRH Colombo		All	
	N	%	n	%	n	%
Highly Disagreed	2	0.77	8	1.78	10	1.41
Disagreed	1	0.38	0	0.00	1	0.14
Moderately Agreed	11	4.23	20	4.44	31	4.37
Agreed	94	36.15	130	28.89	224	31.55
Strongly Agreed	152	58.46	292	64.89	444	62.54
Total	260	100.00	450	100.00	710	100.00

A Bivariate analysis was conducted to find the correlation between organizational culture and level of motivation of the study group. In testing the relationship between organizational culture and motivation of the nurses, Pearson's correlation analysis was performed with one tailed hypothesis test. In order to obtain comprehensive result, organizational culture was divided into three sub-dimensions as value, norms and leadership style. First the relationship between staff motivation and the organizational values, norms, management styles were analyzed and then at last relationship between the organizational culture in general and motivation level were established applying null and alternative hypotheses.

In Figure 3 cumulative score for the motivation level was plotted against cumulative score for organizational values per each participant. The cumulative score for organizational values ranges from 9 to 25 with a 18.55 ± 3.56 average. The data are scattered only in the positive direction with slightly positive R2 value. Hence to find the Pearson correlation one tailed hypothesis was used. Pearson correlation coefficient (r) between the level of motivation of managerial nurses and perception on organizational values was 0.164. This suggests a very mild positive relationship between these two variables at 10 % significance level. It was concluded that there could be very slight positive relationship between employee organizational values and the level of motivation.
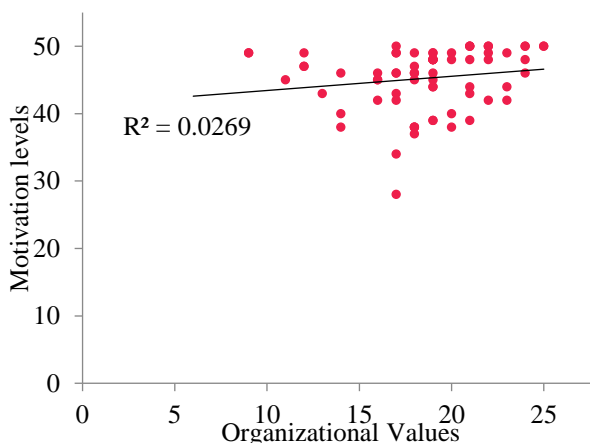
Figure 3. Scatter plot of organizational values vs. motivation level

In Figure 4 cumulative score for the motivation level was plotted against cumulative score for perception on organizational norms per each participant. The cumulative score for organizational norms ranges from 10 to 25 with 18.93 ± 3.89 averages. The data scattered only in the positive direction with positive R^2 value. Pearson correlation coefficient (r) between the level of motivation and organizational norms was positive, 0.299 relationship of at the 0.05 significance. This shows there is moderate association between organizational norms and employee motivation in the two hospitals.
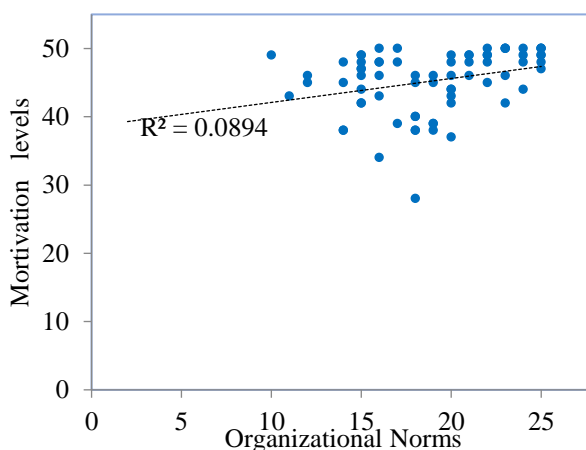
Figure 4: organizational motivation level

Scatter plot of norms vs.

In Figure 5 score for the plotted against score for leadership style participant. The score for leadership style to 25 with 21.48 The data are the positive direction with large positive R^2 value.

cumulative motivation level cumulative perception on per each cumulative perception on ranges from 12 ± 3.25 average. scattered only in

Figure 5: Scatter plot of leadership styles vs. motivation level

According to the data it was observed that there is a significant positive relationship of 0.62 existed between leadership style and the motivation level of managerial nurses at 99 % confidence limit. Figure 6 reports the relationship between motivation level and the organization culture as a whole. Here cumulative score of all three subdivisions, namely organizational value, norms and leadership style were used to obtain a general relationship. The cumulative score for organizational culture ranges from 37 to 75 with 58.96 ± 8.86 average. The data scattered only in the positive direction with positive R2 value. Accordingly, Pearson correlation coefficient (r) between the employee motivation and organizational culture was significant and moderately positive with 0.4243 at 1% significant level. Therefore, meaningful impact of organizational culture is existed on employee motivation concluding that significant positive relationship between organizational culture and employee motivation. Accordingly, employees were motivated with the existing organizational culture.
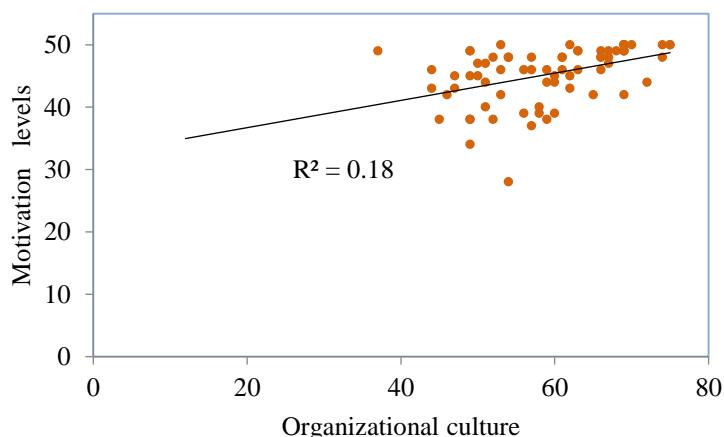
Figure 6: Scatter plot of organizational culture vs. motivation level

Study also conducted the independent (pooled) t test for perception on organizational culture of managerial nurses between SBSCH-Kandy and LRH-Colombo. Two groups of participants from SBSCH-Kandy and LRH-Colombo were tested on organizational culture, using pooled t test. There is no statistically significant difference at 5% sig level. This indicates the two samples means taken from SBSCH-Kandy and LRH-Colombo are identical and need further investigations.

As the final step of the analysis, two multiple linear regression models were used to test whether the components of the organizational culture have some impacts on the level of motivation and the determinants of the employees' satisfaction. The results of the two models are reported in the Table 3.

Table 3: Regression Results of the Model 1 and 2

Model 1		Model 2	
Variables	Coefficients	Variables	Coefficients
Organizational value (OV)	0.192** (0.086)	Salary(s)	0.142* (0.000)
Organizational norms (ON)	0.276* (0.001)	Rewords (RV)	0.064* (0.003)
Leadership style (LS)	0.648* (0.004)	Leadership quality (LQ)	0.028** (0.043)
Constant	22.652*** (0.042)	Recognition (RC)	0.092*** (0.067)
		Gender (G)	-0.317 (0.172)
		Age (AG)	-0.317 (0.213)
		Constant	12
R^2	0.241	Pseudo R2	0.091

Note: Probability values are given in brackets. Furthermore *, ** and ** denotes the significant variables under 1 %, 5 % and 10 % level of significance respectively. Marginal values are given in the second model.

The results of the first model imply that three independent variables that represent organizational culture have impacts on the motivation level of the children hospitals in Sri Lanka. Accordingly, organizational value is significant at 10% level showing the positive relationship with the motivation level. Furthermore, organizational norms and leadership style have taken the expected signs and are significant at 1% level of significance. The results of this model clearly say that the components of the organizational culture are greatly important in determining the motivation level of the studied organizations. The R-Square value of 0.241. This implies that the variation proportion of motivation level variable explained by the independent variables was 24 % and the remaining was explained by other independent variables.

The second model is attempting to identify the determinants of the job satisfaction. In general, the Probit regression coefficients give the change in the Probit index for a one unit change in the predictor. The marginal index effects of the Probit model are the partial effects of each explanatory variable on the Probit index function. For example, coefficient related to salary says that for a one unit increase in salary, the probit index increases by 0.142. The coefficients of all others variables can also be interpreted as the same way. The results of this model imply that four independent variables namely salary, rewords, leadership quality and recondition have significant impacts of the satisfaction level of the employees. Accordingly, organizational value is significant at 10% level showing the positive relationship with the motivation level. Furthermore, organizational norms and leadership style have taken the expected signs and are significant at 1% level of significance. The results of this model clearly say that the components of the organizational culture are greatly important in determining the motivation level of the studied organizations.

As the final steps of the analysis, we investigated the relationship between motivation level and the organizational and organization culture. The variable organization culture was created by combining all three independent variables and examined the relationship. Accordingly following regression model was estimated.

$$ML = \delta_0 + \delta_1 OC + \varepsilon \ldots \ldots \ldots \ldots \ldots (3)$$

The results of this model are given below.

$$ML = 32.348 + 0.218OC \ldots \ldots \ldots (4)$$
$$\qquad (0.000) \qquad (0.000)$$

According to the results organizational culture shows a significant impact on level of employee's motivation in the organizations. It has taken positive sign and was significant at 1 % level of significance. Also, R is 0.18 implying that 18 % of the motivation level is explained by the organizational culture defined in this study. This is consistent with most of the other studies in this area.

5. Conclusion and Recommendation

The purpose of this research was to assess the true effect of the organizational cultures existing within children's hospitals on the motivation of managerial nurses in Sri Lanka. In this sense, the level of motivation of managerial nurses was assessed relative to the three dimensions of organizational culture as a holistic approach. In the study group, 97.18% were female staff, indicating requirements for nursing officers in Sri Lankan children hospital are mostly filled with female nurses. Accordingly, servicing years of more than 50 percent managerial nurses are over 20 years and their broad experience could be used to improve patient care in both hospitals. Having observed the designations related to the majority of respondents, they are nurses who work as in-charge of their clinical unit (59.15%, n=42), indicating a deficiency of required number of sisters to be placed to these units.

Pearson correlation coefficient (r) between the employee motivation and organizational culture was significant moderate positive relationship of 0.4243 at 99% confidence limit. Therefore, meaningful impact of organizational culture existed on employee motivation. Two sections of the samples from SBSCH and LRH were tested against hypothesis on organizational culture and on employee motivation using pooled t test. There was no statistically significant difference at 5% significance level. This demonstrates that two groups obtained from SBSCH and LRH are identical which helps us to give some general conclusions for both groups. According to the results of regression model, all variables that represent the organizational culture have significant impact on motivation level of the employees in two hospitals. It has taken positive sign and was significant at 1 % level of significance. Also, R is 0.24 implying that 24 % of the motivation level is explained by the organizational culture defined in this study. This is consistent with most of the other studies in this area. According to the findings of the study, the overall picture regarding the impact of organizational culture on motivation of managerial nurses in Sri Lankan children's hospitals is moderate and statistically significant. Further, the regression results of the second model imply that variables such as salaries, rewords, leadership quality and recognition are found to be the main determinants of job satisfaction while gender, age and marital status are found to be not significant

There are several possible policy implications from this study. According to the results adjusting organizational culture, including values, norms and leadership styles with the purpose of motivating health employees in children's hospitals in Sri Lanka will lead to achieve expected organizational objectives efficiently and effectively. Therefore, necessary steps need to be taken to improve values, norms and leadership qualities, in order to improve the efficiency and productivity in an organization through better motivational level of employees. Further, factors such as salaries, rewords, leadership quality and recognition need to be considered when designing programs to increase the satisfaction level of the employees in an organization. In general, the results of this study will help policy makers to take necessary steps to improve public sector health services in the future. This research finding can serve as a guide to explore the organizational culture, to other hospitals, either urban or rural in the future.

References

Al-Khaldi, H.M. (2020). The Leadership Styles and Its Role in Improving Motivation Level of the Administrators in Jordan Football Association. The Journal of Social Sciences Research, (64), p389–393.

Asriadi, Suratman, Baharuddin, Hamsinah, Ahmad, B. (2019) Health Service Innovation in Local Government : Analyzing the effect of organizational culture and knowledge management on the Health Service Innovation and Performance. International Journal of Scientific and Research Publications (IJSRP), 9(6), p663-667

Benimoff, M. and Horrocks, J. (1961) A Developmental Study of Relative Needs Satisfactions of Youth: Equilibrium-Disequilibrium. The Journal of Genetic Psychology, 99(2), p185-207.

Cheung, S., Wong, P. and Wu, A., (2011) Towards an organizational culture framework in construction. International Journal of Project Management, 29(1), p33-44.

Deal, T. and Kennedy, A. (1983) Culture: A New Look Through Old Lenses. The Journal of Applied Behavioral Science, 19(4), p498-505.

Fahim, M. (2018) Strategic human resource management and public employee retention. Review of Economics and Political Science, 3(2), p20-39.

Fleetwood, S. (2019) Re-visiting rules and norms. Review of Social Economy, p1-29 [online] DOI: 10.1080/00346764.2019.1623909

Gabris, G.T. & Simo, G. (1995) Public Sector Motivation as an Independent Variable Affecting Career Decisions. Public Personnel Management, 24(1), p33–51.

Hofstede, G. (2001). Culture's consequences: comparing values, behaviors, institutions, and organizations across nations. 2nd ed. Thousand Oaks: Sage Publications.

Hogan, S.J. and Coote, L.V. (2014). Organizational culture, innovation, and performance: A test of Schein's model. Journal of Business Research, 67(8), p1609–1621.

Kassel, G., (2010) A formal ontology of artefacts. Applied Ontology, 5(3), p223-246.

Kelly, D. and Davis, T. (2018) Social norms and human normative psychology. Social Philosophy and Policy, 35(1), p54-76.

Lady Ridgeway Hospital for Children. (2021) Home - Lady Ridgeway Hospital For Children. [online] Available at: <http://lrh.health.gov.lk/home-en/> [Accessed 26 January 2021].

Mahajan, S. (2011) Study on Leadership Styles and Theories. Indian Journal of Applied Research, 4(3), p281–282.

Maslow, A.H. (1943). A Theory of Human Motivation. Psychological Review, 50(4), p370–396.

Ministry of Health, Nutrition and Indigenous Medicine Sri Lanka. (2018) Reorganising Primary Health Care in Sri Lanka. [online] Available at: http://www.health.gov.lk/moh_final/english/public/elfinder/files/publications/2018/ReorgPrimaryHealthCare.pdf [Accessed 22 Dec. 2020].

Neher, A. (1991) Maslow's Theory of Motivation: A Critique. Journal of Humanistic Psychology, 31(3), p89- 112.

Osabiya, B. (2015) The effect of employees' motivation on organizational performance. Journal of Public Administration and Policy Research, 7(4), p62-75.

Popitz, H. (2017) Social Norms. Genocide Studies and Prevention, 11(2), p3-12.

Rakowska, A. and Dermol, V. (2014) Strategic approaches to human resources management practice. Bangkok: Toknow press.

Sabir, A. (2017) Motivation: Outstanding Way to Promote Productivity in Employees. American Journal of Management Science and Engineering, 2(3), p35-52.

Sakellaropoulos, G. (2006) Work Stress and Job Satisfaction of Nursing Employees in Public Hospital of Western Greece. Dissertation for the Postgraduate Program in Health Services Administration.

Sbsch.health.gov.lk. (2021) Home - Sirimavo Bandaranayake specialized children hospital peradeniya. [online] Available at: http://sbsch.health.gov.lk/; [Accessed 30 May 2021].

Uharto, S. and Nusantoro, J. (2018) The relationship among managerial capability,organizational citizenship behavior, and employee performance: mediation effects of organizational culture. Journal of Community Research and Service, 2(1), p168-172.

World Bank. (2021). World Development Report 2018: Learning to Realize Education's Promise. [online] Available at https://www.worldbank.org/en/publication/wdr2018#; [Accessed 30 May 2021].

Average Expenditure Incurred and the Perception of Safe Drinking Water in a CKDu Affected Area: A Case Study in Madawachchiya, Anuradhapura

D.M.C.L. Dharmasena [1], D.M.S.H. Dissanayaka [1]*, Y.M. Wickramasinghe [2]

[1] Department of Agricultural Engineering and Soil Science, Faculty of Agriculture, Rajarata University of Sri Lanka.
[2] Department of Agricultural Systems, Faculty of Agriculture, Rajarata University of Sri Lanka.

* Correspondence: dissanayakashiromi@gmail.com

Abstract

Water is non marketed environmental resource, which was available in excess in the past, but now a day's water is known as a scares resource. Therefore, safe drinking water has become a marketable commodity mainly in Chronic Kidney Disease Uncertain etiology (CKDu) affected areas of Sri Lanka as some past empirical studies have explained that prolonged consumption of drinking water with high contents of ionicity affects the kidney membrane adversely. Majority of Sri Lankans are not willing to pay for drinking water due to low family income and low level of awareness regarding the benefits of safe drinking water. However, the situation is somewhat different in CKDu affected areas because purified drinking water has been delivered to their doorstep by many government and non-government organizations at a subsidized price. Therefore, this study aimed to determine the average cost incurred by a household to purchase drinking water and factors affecting the Expenditure in getting access to safe drinking water in a selected CKDu affected area. This study was conducted in Madawachchiya Divisional Secretariat in Anuradhapura District. Data were collected from a random sample of 50 households in every three regions (urban, semi-urban and rural) using a structured questionnaire and analyzed using both descriptive and using multiple regression. Average monthly Expenditure on good quality drinking water incurred by a family unit in urban, semi-urban and rural were Rs.1075.35, Rs. 939.90, and Rs.893.30. respectively. According to the multiple regression analysis, household size was the most influencing factor in spending on safe drinking water. According to the questionnaire survey, 87 % people of the studied sample have started to consume water purified by Reverse Osmosis (RO) techniques due to the low quality of water they consumed in the past and impact of awareness programs on the benefits of safe drinking water. However, 10% of people are still using water from shallow dug wells and the remaining of the population use water from pipe borne with some averting measures such as boiling and filtering. Though people have to pay for drinking the sufficiency of water usage was very high water due to prevailing dry weather conditions in the study area. Results of this study suggest that the local authorities should take immediate steps to provide water purification filters to the areas where there are no such facilities. Further studies are needed to assess the average provincial expenditure for NCP since the price is the variable factor among rural and urban areas.

Keywords: *Safe drinking water, average monthly Expenditure, RO water, CKDu*

Introduction

1. Introduction

Water is the most crucial factor for the existence and the maintenance of life on the earth. Everyone has the right to sufficient, continuous, safe, acceptable, physically accessible, and affordable water for personal and domestic use (World Health Organization, 2017). Water was considered as a non-marketed environmental resource since it was abundantly available in excess in the past. However, currently, water is known as a scarce resource as a result of the rapid increase in birth rate and rapid depletion of this resource due to human behaviour. In developing countries, a smaller proportion of the population is paying for safe water due to several reasons such as low-income level and the awareness regarding the impacts of poor-quality water on human health, etc. (Parveen *et al.,* 2016). According to studies conducted by Aziz (2007), people must pay for quality drinking water and their perception of that is different from one to another. Many environmental economists have studied averting expenditures to measure how much people value environmental goods and services such as clean drinking water. Around the world, communities are involved in debates over the price of drinking water, which can be expensive to treat and provide but is a basic need for human life. (Rice *et al*., 2012).

The endemic occurrence of chronic kidney disease of unknown etiology (CKDu) was first observed in the 1990s, and over the past 15 years, the prevalence of the disease within certain geographical locations has increased dramatically (Noble *et al*, .2014). The WHO led a study to find the prevalence of CKDu among the 15–70-year-olds to be at 15.1% in Anuradhapura and 20.6% in the Polonnaruwa, the two districts of the NCP.

North Central province (NCP) in Sri Lanka is largely overlapped with the region affected by Chronic Kidney Disease of uncertain etiology (CKDu). Currently, the main cause of CKDu is being under investigation (Gunatilake *et al.,* 2014). Past empirical studies have explained that prolonged consumption of drinking water with high contents of ionicity affects the kidney membrane adversely (Dharmawardana *et al.,* 2014). Male paddy farmer who uses agrochemicals and drinks water with high hardness has been identified as the category that is highly affected for CKDu. Phosphate fertilizer is also can be a main source of arsenic in areas affected with CKDuin Sri Lanka (Jayasumana, 2012). In Sri Lanka, some Government, Non-Government Organizations (NGOs), and private sector institutes are providing purified drinking water to communities in CKDu affected areas at a subsidized price. Consequently, people have started to use safe drinking water to control CKDu up to some extent.

Therefore, people tend to pay for drinking water, and this research attempts to estimate the average cost incurred by a household per month in getting access to safe drinking water, to identify factors that determine the amount of money spent on safe drinking water and, to assess the sufficiency of use of safe drinking water by a family unit in Madawachchiya Area.

2. Methodology

This study was conducted in *Madawachchiya* divisional secretariat area in *Anuradhapura* district, North Central Province of Sri Lanka. The study area was divided into 3 regions: urban, semi-urban and rural areas. The urban area was the area falls within a radius of 1 km from the centre of *Medawachchiya* town. The semi-urban area was an area located between 1km and 2 km outside of the city limits and the rural area was remote locations where more than 2 km away from *Madawachchiya* town. A random sample of 50 households were selected from each of the above studied three different populations. Primary data was

collected through a field survey using a structured questionnaire. Family information, socio-economic factors, water, monthly average income, water consumption information, information on current drinking water facilities and information related to health condition were gathered from the questionnaire. Calculating means & averages, and multiple linear regression analyses were employed using MS Excel and SAS computer package respectively. Descriptive analyses involved the use of means, percentages and averages. Multiple regression analysis was used to establish the statistical relationship between the monthly average Expenditure and household size, the average income of the respondent, distance to a safe drinking water source, education level of the household head and the number of CKDu patients of a family.

1. Average monthly Expenditure by a family unit (Rs.)

$$= \frac{Q * D * P}{N} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.(1)$$

Where,

Q = Amount of water consumed per family per day (L/day)

D = Number of days in the month

P = Unit Price (Rs /L)

N = Number of family units

2. Water use sufficiency

$$= \frac{Q_C}{Q_R} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.(2)$$

Where,
Q_R = Amount of water consumed (L/day/person)
Q_C = MRI recommendation (L/day/person)

3. Factors affecting on the average Expenditure

Following regression equation was used to identify factors affecting on average Expenditure.

$$Y = \beta_1 + \beta_2 D_1 + \beta_3 D_2 + \beta_4 X_1 + \beta_5 X_2 + \beta_6 X_4 + \beta_7 X_5 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3)$$

Where:

Y = Average monthly expenditure for safe drinking water by a family unit (Rs)

D_1 = Area dummy, D1=1 if urban, 0 otherwise

D_2 = Area dummy, D2=1 if semi urban.0 otherwise

X_1 = Family size (number of individuals)

X_2 = Monthly family income (Rs)

X_3 = Distance to the safe water source (m)

X_4 = Number of CKDu patients in a family (Number)

X_5 = Level of education of household head (years)

3. Results and Discussion

3.1 Characteristics of the Sample

Table 4.1 shows the gender composition of the respondents in urban, semi-urban and rural regions of the study area. According to the table, the majority of the respondents were male, and the decision-maker of the family is the male. And the results indicate that the majority of the people in the urban area is over 50 years of age while the age of the majority of semi-urban and rural areas is less than 50 years. The young and adult population are equally distributed in the rural area.

Table 3.1 Gender and Age Composition of the Respondents

		Urban		Semi-urban		Rural	
		No.	%	No.	%	No.	%
Gender	Male	37	74	44	88	32	64
	Female	13	26	6	12	18	36
Age	< 25	3	6	2	4	1	2
	25-50	18	36	29	58	24	48
	50 <	29	58	19	38	25	50

There was no wide variation in family size in all three locations and it is around 4 members in all three locations. Majority of the respondents have spent at least 10 years for formal education. Thus, it is possible to state that the respondents have recovered a sufficient level of education to understand the benefits of consuming safe drinking water. When the total sample was considered, the majority is males, less than 50 years of age with a sufficient level of formal education.

When considering the income level, the average monthly income of the urban sample was higher than the average monthly income of the semi-urban and rural samples. Relatively higher access to non-farm and off-farm employments and higher wages offered in the urban area might be the main reason for the higher income level.

3.2 Sources of Safe Drinking Water

Figure 3.1 shows the past and the present drinking water sources used by the respondents of all three locations studied in the Medawachchiya area. Even though the majority of urban dwellers have access to the pipe born water they have started to use Reverse Osmosis (RO) water due to the bad flavour of the pipe born water and the awareness on the benefits of using safe drinking water. Urban people who used water of deep wells have begun to consume RO water as the water of deep wells are no longer safe to drink. People in semi-

urban areas had used shallow dug wells as the main source of drinking water in the past and at present, the majority of semi-urban dwellers has started to use RO water (figure 3.1 c & d)). However, some people are still using shallow dug well water as the source of drinking water in semi-urban areas. About 70% of people live in semi-urban areas had used shallow dug wells as the source of drinking water in the past and at present, the majority (80 %) of semi-urban dwellers has started using RO water (figure 3.1 e & f). However, a considerable proportion of the rural population is still using shallow dug wells to fulfil their drinking water demand.

According to the results of this field survey, the majority of the people in the study area are satisfied with the current source of drinking water irrespective of the location of their residence. About 41% of the studied population in the urban area claimed that the present drinking water is "Very Good2 whereas the other 57% said it is "Good". Nearly 32% and 16 % of people lived in semi-urban and rural areas respectively were highly satisfied with the current water source while 60% and 74% of the studied sample of semi-urban areas stated that their new water source is "Good". There were no respondents in any of the areas who are unhappy with the present drinking water.

3.3 Sufficiency of safe drinking water usage

The amount of water that one person consumed per day was presented as a percentage of the amount of water that one person should drink per day to assess the sufficiency in water use. There is a standard amount of water required for a person per day for the proper functioning of activities in the human body. Therefore, a sufficient amount of water should be consumed. The average amounts of water consumed by a household per day in each area are presented in table 3.2. Highest and the lowest sufficiency are associated with urban and rural communities.

a) Urban: Previous

Others 2%

Tube well 2%

Shallow Well 44%

Pipe born Water 52%

b) Urban: Current

Shallow well 4%

Pipe born water 4%

Ro water 92%

c) Semi-urban Previous

Ro water 10%

Pipe born water 12%

Shallo w Well 78%

d) Semi-urban: Current

Shallow well 20%

RO water 80%

e) Rural: Previous

Ro Water 2%

Tube Well 22%

Others 6%

Shallow Well 70%

f) Rural: Current

Springs 4%

Shallow well 8%

Ro water 88%
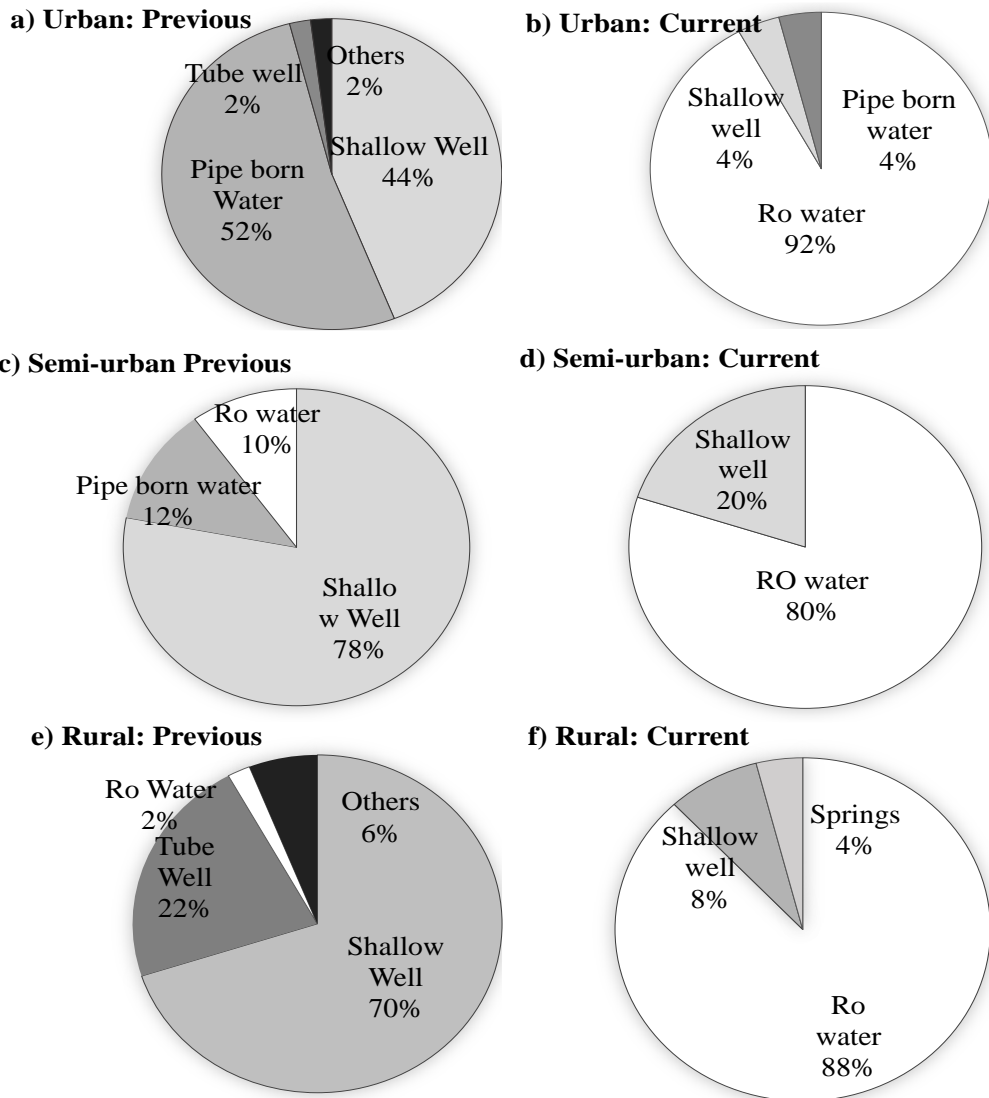
Figure 3.1: Previous (a) and Current (b) Drinking Water Sources of Respondents

Table 3.2 Sufficiency of water usage

Area	Daily Water Consumption (L)	Sufficiency (%)
Urban Area	4.7	157
Semi-urban Area	4.6	153
Rural Area	4.3	143

Institute of Medicine (IOM) has declared that 3L per day is the adequate water intake for a normal person. According to the results, the water intake of the people in this area is higher than the recommended level. This is an adventive condition due to existing dry weather condition in the study area in the study period and this situation can differ if the study is conducted in another period of the year. So, the findings are inconclusive.

3.5 Average Monthly Expenditure on Safe Drinking Water

The first objective of this study was to estimate the average monthly Expenditure on safe drinking water of a family unit. The average drinking water consumption and unit price of water were used to estimate the average Expenditure. According to the results, the average monthly Expenditure incurred by urban, semi-urban and rural family Rs.1075.35, Rs.893.30, and Rs.939.90 respectively.

Most of the people live in all three categories (urban, semi-urban and rural) of regions in Madawachchiya area have access to free or low-cost supply of safe drinking water since some government and non-governmental organizations have established RO water purification plants in those areas. As a result, the unit price of water varies from 50 cents to Rs. 2.50 across the study area. Results revealed that people in urban and semi-urban locations have incurred the highest and the lowest cost respectively.

3.6 Factors influencing average Expenditure on safe drinking water

Another objective of the study was to identify the determinants of average Expenditure incurred on safe drinking water. The multiple regression analysis was used for this purpose where the dependent variable was the average Expenditure and independent variables were the distance to the water source, education level of the respondent, area of residence, the average income of the respondent and the number of CKD patients in the family. According to literature, these factors are affecting significantly on average Expenditure on drinking water. However, this study showed slightly deviated results from the previous studies done. Table 3.3 shows the results of multiple regression analysis done in this study.

Table 3.3: Results of the Multiple Regression Analysis

Variable	Coefficient	Pr> |t|
Intercept	339.47	0.19
D1	10.7	0.91
D2	-135.78	0.14
Household size	159.81	<.0.01**
Education level	-19.16	0.41
Distance to the water source	49.61	0.37
The monthly average income of the respondent	0.00867	0.007**

The unit price of drinking water has shown a lesser variability in the study area and some people have access to free, clean and safe drinking water supplies. Safe drinking water has been delivered to the doorstep a subsidized price and thus the price variability was less. The unit price of water was not a constant value but, those are almost the same across the study area.

When the number of CKD patients has considered it was a negligible number because the majority of the patients had already died. Majority of respondents of the survey are middle-aged people and they are not affected from CKD because this generation is not highly engaged in farming activities and they use purified safe drinking water from their childhood due to CKD prevention awareness programs conducted in Madawachchiya area since previous years.

As a result, the education level of the respondents was also not a significant determinant of the Expenditure on water because the variability in the education level of the respondent was very low. This could be the impact of the free education policy of the government. Other than that, they all are aware and know the benefits of consuming safe drinking water, as a result of intensified awareness programs.

Distance to safe drinking source was another dependent variable that considered, and it was also not significant either because people have the access to safe drinking water installed in close proximities of their residence. At the same time, some organizations have delivered purified drinking water to doorsteps of the people. As a result, there is no considerable variation in the distance to the source of water. Therefore, this variable was not statistically significant.

Household size is hypothesized that it is positively associated with the average Expenditure incurred on safe drinking water. There is a natural tendency to demand more of safe drinking water by large family units.

Another dependent variable on average Expenditure was the average monthly income of the respondent. It was also significantly affected on average Expenditure on safe drinking water. According to the literature it was assumed that people with higher income levels spend more on safe drinking water.

4. Conclusions

The majority of the studied sample are consuming water purified by Reverse Osmosis (RO) techniques. Others are still using water from shallow dug wells. And pipe born water with some averting measures such as boiling and filtering. Household size and the average monthly income are significantly affecting the average Expenditure on safe drinking water.

Findings of this study can be used by local authorities to know how much money which public are willing to pay for drinking water and to establish relevant water supply schemes for people who are not access to clean and safe drinking water.

References

Aziz, S., (2007). *Valuation of avoiding arsenic in drinking water in rural Bangladesh: an averting behavior analysis* (Doctoral dissertation, The University of Maine).

Dharma-Wardana M. W. C, Amarasiri, S. L, Dharmawardene N, and Panabokke C.R (2015) *chronic kidney disease of unknown etiology and ground-water ionicity: study based on Sri Lanka.* Environmental geochemistry and health, 37(2), pp.221-231.

Gunatilake, S. K., Samaratunga, S. S., Rubasinghe, R. T. (2015). *Chronic Kidney Disease (CKD) in Sri Lanka-Current Research Evidence Justification: A Review*. Sabaragamuwa University Journal, 13(2), pp. 31-58

Jayasumana, C., Fonseka, S., Fernando, A., Jayalath, K., Amarasinghe, M., Siribaddana, S., Gunatilake, S. and Paranagama, P., (2015). Phosphate fertilizer is a main source of arsenic in areas affected with chronic kidney disease of unknown etiology in Sri Lanka. *SpringerPlus*, *4*(1), p.90.

Khan, H., Iqbal, F., Saeed, I., and Khan, I. (2010). Estimating Willingness to Pay for improvements in drinking water quality: Evidence from Peshawar, Northern Pakistan. Environmental Economics, 1(2): 38-43.

Madawachchiya divisional secretariat, 2016.

Noble, A., Amerasinghe, P., Manthrithilake, H. and Arasalingam, S., (2014). Review of literature on chronic kidney disease of unknown etiology (CKDu) in Sri Lanka (Vol. 158). IWMI.

Parveen, S.,Ahmad, J. andRahman, M. U. (2016).*Estimating Willingness to Pay for Drinking Water Quality in Nowshera Pakistan: A Domestic Study for Public Health*. International Journal of African and Asian Studies, 19

World Health Organization (WHO), 2016. Drinking water, Facts and Figures.

World Health Organization, 2015. Drinking Water, Fact sheet no. 391.

An Economic Analysis of Employment and Earnings Profile of People with Functional Difficulties in Sri Lanka

[1] Department of Economics and Statistics, Sabaragamuwa University of Sri Lanka

P.A.D.I. Sachinthana [1]*, G.R.S.R.C. Samaraweera [1]

* Correspondence: ishini289@gmail.com

Abstract

People with Functional Difficulties (FD) are one of the disadvantageous groups in the world. They have to face barriers when engaging in education, transport, communication, work force and getting higher earnings. This paper aims to identify the nature of occupations and earning determinants of people with FD in Sri Lanka. Sample was selected from the Sri Lanka Labour Force Survey (LFS) in 2018 as 3,277 of employed people with FD and 2,781 of employed people with FD who are earning wages. This study has identified the highest representations of people with FD by industries and employment status under the different disability groups. According to this study being male, being married, having only one difficulty, living in urban sector, years of education, being in non-agricultural industry, engaging in professional jobs are positively affected with hourly earnings of people with FD, while age, age square, having dual difficulties, being non-Sinhala are statistically insignificant with hourly earnings of a person with FD. Further, policies are proposed for increasing the high representative employment opportunities such as agricultural and own account workers, and increasing income levels of people with FD for reducing earning disparities with related to sectors and gender wise.

Keywords: Difficulty, Disability, Earning, Employment, People with Functional Difficulties

1. Introduction

1.1. Background of the study

The Department of Census and Statistics [DCS] (2012) defines disability as Functional Difficulties (FD) of people. It includes people with mental and physical difficulties. More than one billion persons in the world suffer some condition of disability. Disability can be identified as a negative aspect of interlinkage among persons with personal and environmental factors and their health conditions. They have low levels of education, low economic participation, poverty and social exclusions. (World Report on Disability, 2011).

Further, Yelln & Trupin (2003) stated that disabled persons can be identified by knowing whether they limit their works due to permanent mental and physical conditions or not. Protection of the Rights of Persons with Disabilities Act (1996) defines the Person with disability as a person who is unable to ensure their own life necessities by himself partly or wholly, due to mental and physical deficiencies, whether inborn or not.

According to the Bureau of Labour Statistics (2019), more of the disabled persons are 65 years and over, the ratio of employment-population is lower than that of non-disabled people,

and most of the employed disabled people tend to be self-employed than non-disabled employed people. Among them, 19.3% of the people with disabilities were employed. Also, in 2019, more disabled workers were likely to be in service occupations (20.7%) and they were less likely to engage in professional and managerial occupations.

According to Houtenville & Boege (2020), median annual earnings of full time (full year) disabled people recorded as $40,454 while non-disabled people's recorded $46,250 in United States. Also, the poverty rate (26.9%) for disabled people are higher than that of the non-disabled people (12.2%).

In the United States, the median earnings of persons aged 16 years and over with disabilities was recorded as $22,047 while $32,479 was recorded for persons without disabilities (Disability Statistics Annual Report, 2017). It is showed that persons with disabilities have lower earnings. According to the Disability and Development Report (2018), persons with disabilities are highly engaged in vulnerable employments and they earn lower wages than the persons without disabilities.

When considering the economically active and inactive status of the population, 28.7% represents the economically active while 71.3% represent economically inactive population. (Census of Population and Housing Sri Lanka [CPH], 2012). Further, it explains more people with difficulties remain out of the labour force. Therefore, they have no chances to earn money like the people without difficulties. They provide the population proportion of disability-by-disability types. They consider people with difficulties of 5 years and over as the total population. Also, they stated that 5.3 proportion represent the people with seeing difficulty, 2.1 represent people with hearing difficulty, 3.9 represent people with walking difficulty,1.0 represent people with communication difficulty, a proportion of 1.1 represent self-care difficulty and people with cognition difficulty are represented by 1.9 proportion (CPH, 2012).

Therefore, increasing the ability of their lives and increasing their earning profile are important aspects of this study. Hence, the main objective of this study is to identify the nature of occupations and earning determinants of people with FD in Sri Lankan context.

1.2. Research problem

Disability is a challenging issue in people's lives. It restricts the day-to-day work roles, participation in the workforce and getting higher earnings. Employment and earnings are highly affected by the type of disabilities. Furthermore, Myers & Sai (2014) have emphasized that disability creates negative impacts on earnings. Further, they do not receive sufficient and equal earnings as persons without disabilities. Although people with FD engage in some form of employment, they have more chances of being engaged in vulnerable employment due to their disability types. They have to face financial vulnerability (Batavia & Beaulaurier,2001). As well as, when comparing non-disabled people, depending on impairment severity, disabled men have to face earnings reduction about a quarter. (Berthoud et al., 1993 cited in Thornton & Lunt, 1995, p.2). They generally face some types of barriers. They are attitudinal, policy, physical and empowerment (Unit, 2005). They enjoy low wages and less working hours.

Because of these reasons, increasing their livelihoods and earning capacity is important. Therefore, this study aims to identify the employment nature of people with FD and their earning determinants. Therefore, this study evaluates what is the nature of occupations and earning determinants of people with FD in Sri Lanka?

2. Literature review

2.1. Theoretical literature

Regarding the earnings, Jacob Mincer (1958) introduced the aspect to identify earning distribution among the population and extended the model of human capital (Polacheck, 2008). Here, he explained the reasons for the increase in earnings due to education, reduction of people's earnings according to their lifecycle, enjoying different earnings according to the gender and differences of earning according to the geographic and occupational differences. Further, he stated that earning differentials generate due to the different demographic groups. According to that, men earn higher than women, whites earn higher than blacks, earning increment for men is related with age but in a declining rate, earnings for women are low with age, increasing earnings with education level and are different across jobs and higher earnings are experienced in urban areas etc. By evaluating all these, he stated that earnings are not equal across the population and that it varies with demographic and socio-economic characteristics.

Further, he explained some theories which evaluate the earnings. They are the screening model, which explain the reason for increasing earnings with education. Another one is the model of segregation. Here he explained the reasons for women being employed in various jobs than men, and the crowding model where he discussed the reasons for lower earnings for women than men. According to the theory of human capital, Baldrige et al (2019) stated that disabled people gained more benefits from higher educational levels, yet depending on theories of disability discrimination. Also, they found that disabled people showed a lower trend in turning their gains of education into higher education such as higher degrees and masters. Further, according to the multiple source of discrimination theory, they revealed that women with disabilities face double the disadvantages in gaining earnings than men with disabilities.

Maroto & Pettinicchio (2014) explained that earnings and employment gaps should be interrelated with individual characteristics. They are, preferences of jobs, human capital, disabilities whose work are limited and structural factors such as attitudes of employers and occupational requirements. Further, they mentioned that occupational segregation highly affects in generating labour market structural inequality. Disabled people face occupational segregation and it causes to limit their earning abilities. Further, disabled people mostly engage in less skilled employment opportunities with their limited experience and educational levels. This may vary with their disability types. When determining the earnings of a disabled person, human capital variables and supply side variables play a great role. However, they found that disabled persons' economic well-being strongly depends on the occupational characteristics and structural factors. Also, Myers & Sai (2014) emphasized that labour market discrimination reduces the income level of disabled people.

Further, according to the theory of labour market, when there is lower market wage and highest reservation wage, it causes person with disabilities to be less employed than persons without disabilities (Mitra & Sambamoorthi, 2008).

Jones et al. (2006) followed the traditional model of labour force participation. Here they revealed that the comparison between an individual's reservation wage and a firm's wage offer as the basic factor for knowing whether a person enters the labour market or not.

2.2. Empirical literature

The empirical literature will be examined under the demographic and health, sociological and locational, and economic factors related to determining the earnings of persons with FD.

Under the demographic and health factors, age, gender, marital status and disability are identified as the determinants of earnings for people with FD.

According to the age, Myers & Sai (2014) revealed that age positively affected the earnings. Further, age has been taken as a determinant of the earnings for disabled people (Marato & Pettinichchio, 2014; Brown & Emercy, 2009; Myers & Sai, 2014). Further, age represent the nonlinear and positive impact on earnings. (Mitra & Sambamoorthi, 2008). When determining earnings, age square is an important factor. Myers & Sai (2014); Maroto & Pettinichchio (2014); Jones et al. (2006); Mitra & Sambamoorthi (2008) have taken age square as a determinant of earning function for disabled people.

Gender is the other key determinant that affect the earnings of people with FD. According to Naami (2015); Baldrige et al. (2019), more income was earned by men with disabilities than women with disabilities. Madaus (2006) also explained that men with learning disabilities earn higher incomes (in excess of $60000) than the females. Furthermore, females earn less (less than $30000) than the men with learning disabilities. He also found that there are no significant differences between men and women with learning disabilities in the $30000 - $60000 earning range.

Another important factor is the disability characteristics. Myers & Sai (2014) stated that persons with disabilities receive lower earnings than persons without disabilities across for both genders, all groups of ages and people who are in bad or good health conditions. Further, disability negatively affected the salary earnings and wages. This is statistically significant. Deliere (2000) revealed that non-disabled men earn higher wages and higher income than the disabled men.

Earnings and mental disorders have negative relationships (Jones, 2011). Further, Naami (2015) stated that differences are statistically insignificant when comparing the income with disability types. According to Brown & Emercy (2009), disability creates a huge negative impact on earnings.

Jones et al. (2006) stated that if a man suffers from all disability types, he can earn a higher income than the persons with mental illnesses. Marato & Pettinichchio (2014) found that people with multiple disabilities and cognitive disabilities have a huge earning gap. Sensory disabled adults represented the small earning gaps. Further, multiple disabled peoples' earning was reduced by 37 percent when compared with non-disabled persons. Similarly, people with cognitive, ambulatory and self-care disabilities, reduced their earnings by 36%, 20% and 11% respectively.

Marital status is also identified as an important demographic factor. If disabled men are married, they earn higher wages than the single men. Further, marital status is insignificant for men whose work is limited, and women. (Blackaby et al.1998 cited in Jones 2011. P.21).

Further, Jones (2011); Brown & Emercy (2009) considered marital status as a determinant of earnings.

The following hypothesis was developed based on the above literature.

H1: There is a relationship between earnings of people with FD and demographic and health factors.

Among the sociological and locational factors that affect the earnings of disabled people, years of education plays an important role. Myers & Sai (2014) examined that employment completion leads the employment rates of persons with disabilities. Jones et al. (2006) explained that higher educational qualifications leads to earn higher wages in both disabled and non-disabled groups.

According to sociological factors, ethnicity is important. Past researches have taken ethnicity as a determinant of earnings. (Myers & Sai, 2014; Jones & Lattrielle, 2010; Jones, 2011). Further, ethnic and racial minorities obtain less earnings than those in non-minorities (Myers & Sai, 2014). Baldrige et al. (2019) also revealed that disabled non-minorities earn higher earnings than the disabled minorities.

The residential sector can be identified under the locational factor. There are no significant differences between urban majority earnings and urban minority groups' earnings (Myers & Sai, 2014). Himaz and Aturupane (2012) have found that the residence in estate sector has significant negative relationship with earning in comparison to rural sector in Sri Lanka. Based on these findings, hypothesis 2 was developed as follows.

H2: There is a relationship between earnings of people with FD and sociological and locational factors.

Under the economic factors, industry and occupation play a predominant role in determining the earnings of people with FDs. According to the occupation, Maroto & Pettinicchio (2014) stated that occupation plays a significant role in determining disabled people's earnings. Further, he stated that persons with disabilities have low probability of being employed in higher paying occupations. Further, he stated that disabled people have low representation in business, arts occupations, science and management. According to Jones et al. (2006), among non-disabled group, females with professional occupation have higher chances of earning better wages than the disabled group.

According to Maroto & Pettinicchio (2014), industry plays a significant role in determining disabled people's earnings. People with cognitive disabilities have high representation in the food service, entertainment and accommodation industries. People in these industries earn low mean annual wages than the population's mean annual wages.

H3: There is a relationship between earnings of people with FD and economic factors.

According to the earnings of people with FD, researchers do not sufficiently check the relationships of relevant variables. They are, disability characteristics, residence and ethnicity. Furthermore, less researches were available on the population of FD for this area, in the world context. Further, there are less researches to evaluate how disability impacts on earnings by taking these variables directly. Further, disability characteristics have been defined in different ways and not sufficiently checked in previous researches. So, this

research is done for filling the gap of lacking researches on this area in the world and Sri Lankan contexts.

2.3. Methodological literature

Table 1 represents the analysis models used by the previous researchers to analyse the determinants of earnings for people with FD in different countries. The Ordinary Least Square regression model and Semi log regression model were mostly used for the analysis.

Table 1: Analysis models employed in the previous studies

Analysis model	Researchers
Semi log regression model	Myers & Sai (2014)
Logit regression model	Marato & Pettinichchio (2014)
Ordinary Least Square regression model	Marato & Pettinichchio (2014) Brown & Emercy (2009) Deleire (2000)
Random effect model	Marato & Pettinichchio (2014)
Bivariate probit model	Jones (2011)

Source: Researcher developed

This research uses the Semi Log Multiple Regression Model for interpreting and checking the impact. So, this study planned to fill the research gap by using secondary data from LFS, 2018 in different aspects in the Sri Lankan and world context.

This study has also done the descriptive analysis for identifying the employment nature of people with FD by various ways and has done the inferential analysis for identifying the determinants of earnings of people with FD in Sri Lanka.

3. Conceptual framework

Conceptual framework and respective abbreviations are presented in Figure 1 and Table 2 respectively.

Figure 1: Conceptual Framework for determinants of persons with FDs earnings
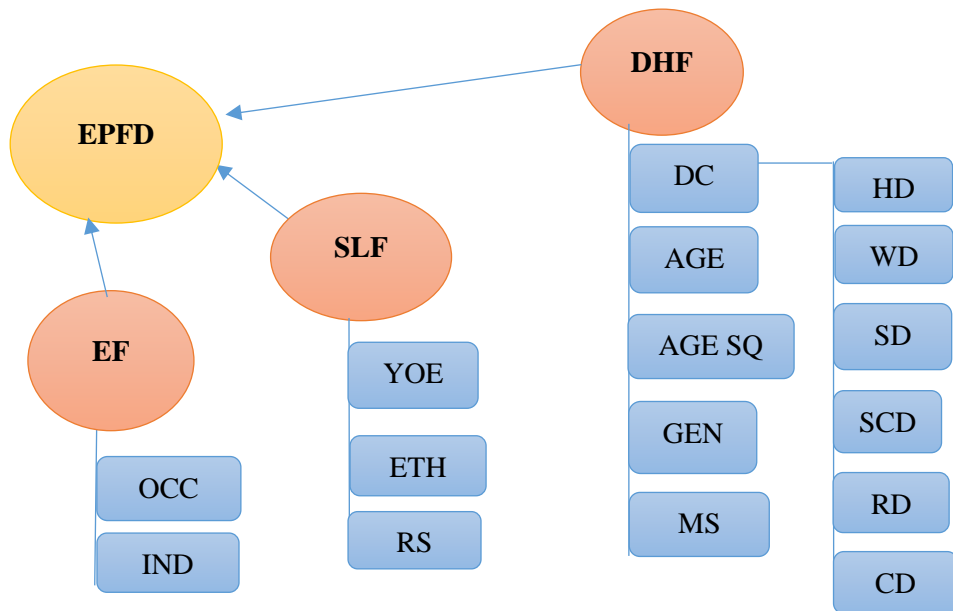
Source: Researcher developed

Table: 2 Abbreviation of variables

Abbreviation	Variable Name	Abbreviation	Variable Name
EPFD	Earnings of People with Functional Difficulty	CD	Communication Difficulty
DHF	Demographic& Health Factors	RD	Remembering Difficulty
SLF	Sociological &	RS	Residential sector
	Locational Factors	AGE	Age
EF	Economic Factors	AGE SQ	Age Square
DC	Disability Characteristics	GEN	Gender
HD	Hearing Difficulty	MS	Marital Status
WD	Walking Difficulty	YOE	Years of Education
SD	Seeing Difficulty	ETH	Ethnicity
SCD	Self-Care Difficulty	IND	Industry
		OCC	Occupation

Source: Researcher developed

4. Methodology

The data and sample, variable description and econometric model were discussed under this section.

4.1. Data and the sample

According to CPH (2012) total population with FD (5 years and over) are 18,527,683. Data of LFS, 2018 was used for the analysis of this study. According to the LFS, total respondents are 80577. Here, 3,277 of employed people with FD were used as a sample for analysing employment nature. When preparing this sample, the study removed 18,917 respondents who are aged below 15 years from the total respondents. Further, 70 respondents who had obtained special education from special educational institutions were removed due to their actual educational years not being known properly. Further, the observations of 51,120 people without FD were removed from the total population of with and without difficulties. Finally, the 44 unemployed and 7,149 inactive people with FD were also removed. The final sample was thus created as 3,277. It is used for analysing the employment nature of the people with FD. A further, 2,781 employed people with FD were used as a sample of people with FD earnings. Therefore, 388 observations related to people without earnings were removed. A further 108 observations were removed as extreme values in earnings. Finally, the sample consists of 2,781 employed people with FD with any kind of earnings.

4.2. Econometric Model

The Semi-Log Multiple Regression model is used for the analysis.

$$\ln(Y) = \alpha + \beta_i D_i + \gamma_i X_i + u_i$$

ln(Y) = Log hourly earnings, α =Constant, β_i = Coefficient of dummy variables,

γ_i =Coefficient of continuous variables, u_i = Error term

4.3. Variable Description

This study used 15-20 questions of the LFS which related to the disability. Here they considered the disability under six categories. They are: hearing, seeing, walking, remembering, self-care, communication difficulty. This study has also taken difficulty and disability as the same concept. This study considered all the persons who suffer from even a minor disability as disability. Also, major, cannot do anything, minor difficulty are also considered as disability.

According to this objective, the dependent variable is log hourly earnings. When preparing hourly earnings, this study used question number 45(a), (b) and (c) from the LFS, 2018. Question number 45(a) represents the monthly salary earnings as gross salary, additional earnings and other income types. Here, 45(b) represents the daily wage earners and the monthly income is calculated by multiplying the daily wage by the monthly working days and adding another income. Further, 45(c) represents the wages related to employers and own account workers. Finally, the monthly income was created by adding all these wages. Further, it is divided by using the monthly working hours for generating the earning per hour. This study only used primary job work hours. Finally, hourly earnings were converted into the log form for generating log hourly earnings.

When preparing variables according to this objective they are categorized into three types as demographic and health factors, sociological and locational factors and economic factors.

Here, all variables are categorized into less categories for convenience of modelling. Further, disability characteristics, gender, age, age square and marital status are identified as demographic and health factors. All the FD respondents who are having only one difficulty are categorized into one category as having only one difficulty. If people with FD have any of two difficulties, they were identified as dual difficulties. Further, if people have three to six difficulties, they are identified as multiple difficulties. Marital status and gender are identified as dummy variables. Marital status is identified as married and unmarried and gender identified as male and female. Further, the age variable is identified as a continuous variable in the model. Further, an age square variable was created by using age variable for earning function.

Years of education, ethnicity and residential sector are identified as sociological and locational factors. Here, years of education is used as a continuous variable for the model. According to ethnicity, this study used only two categories of ethnicity. They are, being Sinhalese and not being Sinhalese. Sri Lankan Tamil, Moor and other, Indian Tamil ethnic categories is identified as non-Sinhala group. The residential sector is categorized into two groups. They are urban and non-urban areas. Rural and estate sector have been identified under the non-urban category.

Further, occupation and industry are identified under economic factors. Occupation is divided into nine standards of occupational categories in Sri Lanka and it identified under professional workers, skilled workers and elementary workers. When creating professional workers, managerial, professional, technicians and associate professionals are identified under professional jobs. Further, clerical support workers, service and sales workers, agriculture, forestry and fishery workers, production workers are identified as skilled workers. Further, elementary workers and unidentified occupations were classified under elementary workers. In the earnings function, these occupation categories were further divided into two categories as professional job and non-professional job. Here, professional jobs are identified as professional workers and skilled workers and elementary workers identified as non-professional job. Industry is divided into agriculture, industrial and services. It is also divided into two categories as agricultural industry and non-agricultural sector. Non-agricultural sector includes the manufacturing sector and service sector.

5. Results and discussion

5.1. Identifying the nature of occupation among people with FD in Sri Lanka

Descriptive analysis of the nature of occupations among people with FD by industry and job status are represented in Table 3.

Table 3: Analysis of the employment for people with FD by nature of industry and employment status

Disability Types	Industry						Employment status							
	Agriculture		Manufacture		Service		Employee		Employer		Own account worker		Unpaid family worker	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Only hearing diff (143)	74	51.75	34	23.78	35	24.48	61	42.66	5	3.50	66	46.15	11	7.69
Only walking diff (507)	207	40.83	117	23.08	183	36.09	202	39.84	10	1.97	245	48.32	50	9.86
Only seeing diff (1087)	443	40.75	239	21.99	405	37.26	498	45.81	28	2.58	485	44.62	76	6.99
Only remember diff (94)	37	39.36	16	17.02	41	43.62	42	44.68	3	3.19	44	46.81	5	5.32
Only self-care diff (109)	37	33.94	33	30.28	39	35.78	52	47.71	2	1.83	46	42.20	9	8.26
Only communication diff (32)	8	25	5	15.63	19	59.38	18	56.25	-	-	11	34.38	3	9.38
Dual diff (729)	325	44.58	169	23.18	235	32.24	261	35.80	13	1.78	385	52.81	70	9.60
Multiple diff (576)	287	49.83	114	19.79	175	30.38	202	35.07	13	2.26	306	53.13	55	9.55

Source: Researcher developed

Note: All the persons with FD (cannot do anything, difficulty of major and minor) who were occupied in every category are represented by disability types.

According to Table 3, the industry categories are prepared based on the fourth revision of the International Standard Industrial Classification (ISIC). Here, all categories of disabilities, instead of people who are having only remembering difficulty, having only self-care difficulty and having only communication difficulty, are highly employed in the agricultural industry. Others have high representation in the service industry.

People with FD are physically vulnerable. Therefore, they engage highly in small workload and easy occupations. Hence, most of them are employed in the agricultural industry. Also, people with dual difficulties engage highly in the agriculture industry. Among the people with multiple difficulties, the highest number of people were recorded in the agricultural sector and the lowest in the manufacturing sector.

When considering the employment status, there are lower representations among all the disability type for being employers. Therefore, people having only hearing difficulty, having only walking difficulty, remembering difficulty, dual and multiple difficulties represent high probability of engaging in employment as own account workers. As employees, high representation was recorded among the people with only seeing difficulty and self-care difficulty. There is also a considerable representation among the unpaid family workers in every disability category than the category of being an employer.

Table 4: Hourly earnings by disability categories.

Disability type	Wages (Rs.)				
	0 – 100	100 - 200	200 – 300	300 - 400	400 plus
Only Hearing difficulty	68	40	8	2	0
Only Walking difficulty	245	120	39	16	6
Only Seeing difficulty	504	312	81	29	17
Only Remembering difficulty	44	28	7	3	1
Only Self-care difficulty	43	36	6	5	4
Only Communication difficulty	10	12	4	0	1
Dual difficulty	360	177	44	21	7
Multiple difficulty	323	112	36	5	5

Source: Researcher developed

Note: All the persons with FD (cannot do anything, difficulty of major and minor) who were occupied in every category are represented by disability types.

According to Table 4, the highest number of persons with FD in each disability category earns Rs. 0-100 wages per hour. They have less chances of obtaining Rs. 400 plus earnings per hour due to their disability type and low efficiency. According to the above Table, people with FD generally earn low hourly earnings. It can be shown by their mean hourly earnings as well (Table 5).

Table 5: Mean hourly earnings by disability categories

Disability type	Mean hourly earning (Rs.)
Only Hearing difficulty	99.82
Only Walking difficulty	114.18
Only Seeing difficulty	116.95
Only Remembering difficulty	114.59
Only Self-care difficulty	134.19
Only Communication difficulty	142.61
Dual difficulty	108.75
Multiple difficulty	95.51

Source: Researcher developed

Note: All the persons with FD (cannot do anything, difficulty of major and minor) who were occupied in every category are represented by disability types.

According to Table 5, the highest mean earnings was recorded among the people with communication difficulties, while the lowest earnings was recorded among the people with multiple difficulties. Generally, multiple difficulty people have less ability to work. So, they cannot engage in high earning employment opportunities and gain higher earnings. However, people with Communication difficulty have only difficulty in communicating. So, they have more chances of engaging in higher earning employment opportunities.

Table 6: Descriptive Statistics of Dependent and Independent variables in the model

Variable	Mean / Proportion	Standard deviation
Dependent variable		
Log hourly earnings	4.4403	0.7527
Independent variables		
Age (X_1)	55.1499	11.8692
Age square (X_2)	3182.344	1270.858
Gender		
Male(D_1)	0.6972	0.4595
Female (Ref)	0.3028	0.4595
Marital Status		
Married (D_2)	0.9324	0.2511
Unmarried (Ref)	0.0676	0.2511
Disability		
Only one difficulty (D_3)	0.6081	0.4883
Dual difficulty (D_4)	0.2189	0.4136
Multiple difficulty (Ref)	0.1729	0.3783
Ethnicity		
Non – Sinhala (D_5)	0.2913	0.4544
Sinhala (Ref)	0.7087	0.4544
Years of education (X_3)	7.3700	3.7623
Residential Sector		
Urban (D_6)	0.1154	0.3196
Non-urban (Ref)	0.8846	0.3196
Occupation		
Professional job (D_7)	0.1352	0.3420
Non-professional job (Ref)	0.8648	0.3420
Industry		
Non-agricultural industry (D_8)	0.5958	0.4908
Agricultural industry (Ref)	0.4042	0.4908

Source: Researcher developed

Number of observations (N) – 2781

(D) – Dummy variables

People with FD (Cannot do anything, major and minor difficulty) earn log hourly earnings of about 4.44 and their mean age is 55 years. It represents higher male

proportion, and the majority are married. People with one disability has high representation than the people with dual difficulties, while 71 percent are Sinhalese and 29 percent are non-Sinhalese. Also, the highest proportion was recorded in the non-urban sector. The majority work in the non-agricultural sector and are engaged in non-professional jobs. The majority of the sample have engaged in education up to grade 7. Table below shows the Semi Log Multiple Regression model.

Table 7: Semi Log Multiple Regression Model

Variable	*Coefficient*	*Standard error*	*P value*
Age (X_1)	-0.0037	0.0081	0.651
Age squared (X_2)	-0.00003	0.00008	0.724
Gender			
Male (D_1)	0.3065	0.0306	0.000
Marital Status			
Married (D_2)	0.2463	0.0555	0.000
Disability			
Having only one diff (D_3)	0.0681	0.0381	0.074
Dual difficulty (D_4)	0.0461	0.0449	0.304
Ethnicity			
Non - Sinhala (D_5)	-0.0054	0.0293	0.853
Years of education (X_3)	0.0241	0.0041	0.000
Residential Sector			
Urban (D_6)	0.1353	0.0389	0.001
Occupation			
Professional job (D_7)	0.2807	0.0425	0.000
Industry			
Non-Agricultural sector (D_8)	0.1492	0.0302	0.000
Constant	3.9151	0.2015	0.000

Source: Researcher developed

Significant level -10%

Base category: A person who is female, unmarried, having multiple difficulties, live in non-urban area, being Sinhalese, doing a non-professional job and working in agricultural sector.

Under the demographic and health factors, gender is an important factor and being male positively affects the hourly earnings of persons with FD. Generally, males enjoy higher earnings than the females. Females with FD do not like to work overtime hours due to cultural problems, security level and their disability conditions. However, males with FD like to work more hours than the female. Males have high bearing capacity than the females. Further, males can control their disability

conditions with the work schedule. They find high income jobs from any side to earn higher incomes. Because of this reason, the hourly earnings of persons with FD are higher than the female's hourly earnings. Therefore, if a person with FD is a male, it will increase the hourly earnings at the rate of 0.3065 percent. According to Naami (2015); Baldrige et al. (2019), more income was earned by men with disabilities than the women with disabilities.

The other important demographic factor is the marital status. Generally, married persons with FD earn higher wages than the unmarried people. Unmarried people have less responsibilities in their life. They can depend on their family members. However, married persons have to maintain a family. They have more responsibilities. Therefore, they engage in jobs which offer higher earnings. If the job has complex work schedules, unmarried persons with FD do not prefer to engage in them even though it offers higher earnings. The reason for that is they highly expect freedom of their lifetime and they do not highly plan their future due to less responsibilities and their disability conditions. However, married persons with FD engage in any high-income jobs suitable with their disability type to earn better wages. Therefore, hourly earnings of people with FD will increase at the rate of 0.2463 percent due to that person with FD being married.

Further, the researcher found that disability characteristics are the important factor for determining hourly earnings of persons with FD. Also, having only one disability is significant with earnings of people with FD. If a person has only one difficulty, he has the ability to earn a higher income than a person with multiple difficulties. If they have only one difficulty, they can engage in any higher paying jobs. They have lesser disability conditions than the multiple disabled people. Business firms also like to recruit people with FD who are having only one difficulty and order the relevant work schedule. If people have only walking difficulty, they can do any job by being sedentary. Also, if a person has only seeing difficulty, then he can carry out a job by using the Braille system and thus get higher earnings. Therefore, they can earn higher earnings by working for longer time periods. However, multiple difficulty people can engage in lesser work schedules and they enjoy less chances of earning higher incomes. People with only one difficulty can engage in any self-employment as well. Therefore, hourly earnings of people with FD will increase at the rate of 0.0681 percent due to having only one difficulty.

Past researchers have revealed the impact of disability on earnings. Accordingly, Myers & Sai (2014) stated that persons with disabilities receive lower earnings than persons without disabilities across for both genders, for all group of ages and for those who are in bad or good health conditions. Further, disability negatively affects the salary earnings and wages.

When considering sociological and locational factors, years of education is the important factor affecting the earnings of people with FDs. Years of education and earnings has a positive relationship. People gain education while expecting higher paying jobs in the future. If a person with FD has more years of education, that person has more chances of engaging in higher paying occupations and earning higher

wages. Most of the organizations decide the wage level according to the person's years of education. Due to their disability condition, most of them cannot earn better wages without education. So, if they have more education years, they have chances to earn more wages. Also, if they are knowledgeable, they can start their own businesses and earn better earnings. Therefore, when years of education increases by one year, the hourly earnings of people with FD will increase at the rate of 0.0241 percent.

As well as, residential sector is also an important factor for determining the earnings of people with FD. If people with FD live in non-urban areas, they have more job opportunities, but higher paying jobs are not available to them. However, in urban areas they can find some higher paying jobs. They can engage in some self-employment or earn some additional earnings by living in the urban area. Thus, although a person is disabled, he/she can find any occupation where he/she can receive better earnings amidst the vast job market. People with FD can engage in any employment in urban areas to earn higher incomes than in the non-urban areas. Therefore, the hourly earnings of people with FD will increase at the rate of 0.1353 percent due to people with FD living in urban areas.

Under the economic factors, occupation and industry are the important factor for determining earnings of a person with FD. According to the occupation, if a person is engaged in a professional job, he can earn more wages than the person who engages in a non-professional job. Professional workers are highly qualified workers. They are specified for some specific area. However, professional workers are not freely available in the job market like non-professional workers. If a person with FD is a non-professional worker, he can engage in some jobs but which are not higher paying jobs. They mostly engage in temporary work schedules. Although the person is disabled and he is a professional worker, he can get higher earnings because of the limited availability of professional workers. Therefore, hourly earnings of people with FD will increase at the rate of 0.2807 percent due to being professional workers. According to Jones et al. (2006), females with professional occupations enjoy higher chances of earning better wages in both non-disabled and disabled groups.

According to the industry, if a person with FD works in the agricultural sector, he can engage in any agricultural activities related to his disability condition. However, they cannot earn higher earnings from that. If a person with FD works in the non-agricultural sector, such as the manufacturing and services sector, he/she can choose higher paying job opportunities according to his/her disability type. They have more job opportunities in those sectors. Generally, people in non-agricultural sector earn higher wages than people in the agricultural sector. So, if a person is disabled and works in the non-agricultural sector, he/she can work more overtime hours than a person with FD in the agricultural sector. Therefore, their earning increases. According to that, hourly earnings of people with FD will increase at the rate of 0.1492 percent due to a person with FD working in the non-agricultural sector. According to Maroto & Pettinicchio (2014), occupation and industry play a significant role in determining disabled people's earnings.

The adjusted R^2 of this model is 0.1294. Accordingly, the hourly earnings of persons with FD are described by 12.94% of the variation of log of hourly earnings of persons with FD.

According to the Likelihood ratio test, *P* value of this model represents a level of less than 5%. It means, a significant effect is created on the earnings for persons with FD by all the independent variables in this model. Therefore, the overall model is significant.

6. Conclusion and recommendations

This study seeks the nature of employment among people with FD and the key determinants of their employment using the secondary data of Sri Lanka Labour force Survey, 2018, conducted by the Department of census and Statistics. The sample was 3,277 of employed people with FD and 2,781 out of them have earnings.

The majority of employed with FD are occupied in Agricultural sector according to industrial classification of employment while the majority of them are own account workers by employment status. Employees are the second highest category among other employment status showing their economic vulnerability with informal insecure employments.

This study has identified that being male, being married, disability (only one difficulty), residential sector (urban sector), years of education, industry (Non-agricultural sector), occupation (professional job) positively affected the hourly earnings of people with FD with reference to the base category and also the age, age square, dual difficulty, non-sinhala are statistically insignificant with the hourly earnings of a person with FD. Important policy recommendations are proposed as follows as the final contribution of the study.

- Production based occupations should be improved with easy work schedules among the people with FD through the Ministry of Labour.

- The Ministry of Agriculture should facilitate farming during both the *Yala* and *Maha* seasons by providing the essential financial assistance for local authorities to enhance the participation of persons with FD as paddy growers.

- Vocational Training and the Ministry of Skills Development and the Ministry of Labour together with government banks should conduct the programmes to provide technological and financial literacy to increase the income levels of people with FDs who are live in the non-urban sector.

- The Ministry of Labour should highly consider employing people with FDs in the services sector to increase employment opportunities.

- The Ministry of Labour and Commerce should reduce the earning disparities for people with FD who live in urban and non-urban sectors by implementing more high earning employment opportunities in the non-urban sector.

- Legal frameworks should be created and enacted through parliament to register and formally conduct businesses for own account workers with FDs. Also, disabled employers should be encouraged by conducting workshops on starting new businesses.
- Proper legal frameworks for reducing the persons with FD earning disparities by gender should be implemented by the Ministry of Labour.
- The Ministry of Labour should implement higher earning employment opportunities for people with FDs who work in agricultural and fishery activities to encourage them.

7. Acknowledgement

References

Baldridge, D. C., Kulkarni, M., Eugster, B., & Dirmyer, R. (2019). Disability, Gender and Race: Does Educational Attainment Reduce Earning Disparity for All or Just Some?. Personnel Assessment and Decisions, 5(2), 11

Batavia, A. I., & Beaulaurier, R. L. (2001). The financial vulnerability of people with disabilities: Assessing poverty risks. *J. Soc. & Soc. Welfare*, *28*, 139.

Brown, C. L., & Emery, J. C. (2009). The impact of disability on earnings and labour force participation in Canada: Evidence from the 2001 PALS and from Canadian case law. J. Legal Econ., 16, 19

Bureau of labor statistics, U.S department of labor, news release , 2019 https://www.bls.gov/news.release/archives/disabl_02262020.

Census of Population and Housing (CPH) 2012 - Sri Lanka, Department of Census and Statistics, Sri Lanka

DeLeire, T. (2000). The wage and employment effects of the Americans with Disabilities Act. Journal of human resources 693-715.

Department of Census and Statistics (DCS) 2012, Disability in Sri Lanka https://unstats.un.org/unsd/demographic-social/meetings/2016/bangkok--disability-measurement-and-statistics/Session-6/Sri%20Lanka.pdf

Disability and Development report, 2018: Realizing the Sustainable Goals by, for and with Persons with disabilities, United Nations

Disability Statistics Annual Report, 2017, A Publication of the Rehabilitation Research and Training Center on Disability Statistics and Demographics, United States

Himaz, R. and Aturupane, H.,2012, Returns to Education in Sri Lanka: A Pseudo Panel Approach. Discussion Paper No. 615. Department of Economics. University of Oxford. UK

Houtenville, A., & Boege, S. (2020). 2019 Annual Report on People with Disabilities in America. *Institute on Disability, University of New Hampshire*.

Jacob Mincer (1958) "Investment In Human Capital and the Personal Income Distribution," Journal of Political Economy, 66:281-302.

Jones, M. K. (2011). Disability, employment and earnings: an examination of heterogeneity. *Applied Economics*, *43*(8), 1001-1017.

Jones, M. K., & Latreille, P. L. (2010). Disability and earnings: Are employer characteristics important?. Economics Letters, 106(3), 191-19

Jones, M. K., Latreille, P. L., & Sloane, P. J. (2006). Disability, gender, and the British labour market. Oxford Economic Papers, 58(3), 407-449.

Madaus, J. W. (2006). Employment outcomes of university graduates with learning disabilities. Learning Disability Quarterly, 29(1), 19-31.

Maroto, M., & Pettinicchio, D. (2014). Disability, structural inequality, and work: The influence of occupational segregation on earnings for people with different disabilities. Research in Social Stratification and Mobility, 38, 76-92.

Mitra, S., & Sambamoorthi, U. (2008). Disability and the rural labor market in India: evidence for males in Tamil Nadu. *World Development*, *36*(5), 934-952.

Myers, S., & Sai, D. (2014). The effects of disability on earnings in China and the United States.

Naami, A., 2015, 'Disability, gender, and employment relationships in Africa: The case of Ghana', African Journal of Disability 4(1)

Polachek, S. W. (2008). Earnings over the lifecycle: the Mincer earnings function and its applications (Vol. 16). Now Publishers Inc

Protection of the Rights of Persons with Disabilities Act, No. 28 (1996), Parliament of the Democratic Socialist Republic of Sri Lanka

Sri Lanka Labour Force Survey (LFS)-2018 (Department of Census and Statistics)

Thornton, P., & Lunt, N. (1995). *Employment for Disabled People: social obligation or individual responsibility* (pp. 1-7). University of York, Social Policy Research Unit.

Unit, P. M. S. S. (2005). Improving the life chances of disabled people. *London: Cabinet Office*, *74*.

World Report on Disability, Easy Reading, 2011, World Health Organization (WHO) and World Bank

Yelln, E. H., & Trupin, L. (2003). Disability and the characteristics of employment. Monthly Lab. Rev., 126, 20

Assessing the SMEs' Readiness of Facing Barriers in Institutional and Legislation Setting and Drivers for Sustainability in Sri Lanka: A Literature Review and Directions of Future Research

P.S.K. Rajapakshe [1*], S.A.U. Niranjala [2], M.A.K.N. Aravinda [1], J.M.G. Lalani [2], K.S. Denipitiya [2]

* Correspondence: pskr75@yahoo.com

[1]Department of Environmental Management, [2]Department of Economics, Faculty of Social Sciences and Humanities, Rajarata University of Sri Lanka

Abstract

Developed and developing countries have recognised Small and Medium Enterprises (SMEs) as the key to innovations, economic growth, and market competition. In Sri Lanka, SMEs play a leading role in environmental, social, and economic sustainability. The paper attempts to assess institutional and legislation barriers and drivers affecting the sustainability of SMEs in Sri Lanka by using a systematic literature review. The researchers filled the literature gap on institutional and regulatory barriers and drivers on SMEs sustainability growth and found a structured research framework. The research findings will provide clear directions for further investigations on drivers for sustainable transition and barriers to the development of SMEs in an empirical context which unquestionably help find the case-specific and unique obstacles and drivers for the sustainability of SMEs.

Keywords: Economic Growth, Economic Sustainability, SMEs, Sri Lanka

1. Introduction

Small and Medium Enterprises (SMEs) empower domestic demand through innovation, job creation, and competition; consequently, they can be a driving force that backs a resilient national economy (Shinozaki, 2012). The development of SMEs is recognised as a key to ameliorating innovations, enhance economic growth, and increase market competition in both developed and developing economies (Paula, Steinhauser, & Soares, 2020).

A strong SME sector could provide enhanced employment opportunities and contribute to economic growth and the development of a competitive market system in Sri Lanka (Velnamby, 2017). Similarly, Karatayev et al. (2016) stated that SMEs play a notable role in economic growth and development by generations of employments or creating new employment, revenue generation, contributing to the GDP growth, embarking on innovations and enhancing other economic activities, regional development, technological advancement, entrepreneurs, and social development. Hence SMEs has become a major advantage to Sri Lanka in many ways, i.e., economic, environmental, and social sustainability. SMEs are also an important source with innovative potential and job-generating possibilities.

Srivastava (2007) stated that, as the Sustainable Transition Development (STD) has gained significant attraction under today's competitive business environment, many organisations still depend on natural resources and contribute to environmental pollution. The organisations suffer from adopting sustainable practices since most of them are not aware of how to utilise the enablers and alleviate development barriers (Srivastava, 2007).

Sri Lankan governments, firms, academics, and policymakers have a good understanding and are becoming more aware of sustainable development over the past decades. The firms that use sustainable solutions tend to experience more severe obstacles than the other firms; therefore, government institutions often support them. The governmental bodies have been developing and implementing investment programmes for research and development to find sustainable solutions, but the knowledge about which policies are suitable and effective is inadequate. Policymakers of the country tend to favour a particular type of firms (Velnamby, 2017). According to Weerasiri et al. (2016), environmental, technological innovation may lead to win-win situations in which improvements in environmental quality and economic growth coexist.

The possibility of providing sustainable renewable energy, technological, and green growth solutions already demonstrated through initial commercial successes makes the parties towards SMEs. The SMEs having between 10 and 250 staff, and typically older than three years can sell (new) products to the existing consumer base in local markets. Despite the attention shift, the governmental policymakers are reluctant to support SMEs as these firms are often more vulnerable to failure because they have a small market coverage and are sensitive to environmental changes, both natural and manmade, such as Covid-19, floods, and Easter attack. Also, the market failures put severe pressures on their low levels of limp resources. Despite many efforts to push the sustainability adaptation in Sri Lanka, this adaptation has remained relatively slow, partly because of the lack of governmental support, various policy changes, and other barriers for sustainable transition in the country.

2. SMEs is in local context

The definition of SMEs in Sri Lanka differs from every agency and institution. According to Kodippiliarachchi, Priyanath, and Premarathna (2017), the SMEs of Sri Lanka pave their path of socio-economic development by making a valuable contribution to the country's employment, GDP, trade balance and other relevant facets.

National Policy Framework (2017) for SME development is a notable landmark in the expedition to build a more conducive environment for SMEs. It envisions adapting SMEs to large scale and sustainable business entities. Recently, businesses tend to follow the triple bottom line concept, which emphasises the need of imposing a balance between people [social wellbeing, planet (environmental sustainability) and profit (financial sustainability)] to succeed in a challenging, competitive, and dynamic business environment.

A win-win situation could be gained by the environmental technologies in which improvements in environmental quality and sustainability growth coexist (Gamage, 2003). Table 1 illustrates how the government of Sri Lanka has elucidated SMEs.

Table 1: Definition of SMEs

Sectors	Criteria	Medium	Small	Micro
Manufacturing Sector	Annual turnover	Rs. Mn. 251-750	Rs. Mn. 16-250	Lower Rs. Mn. 15
	Number of Employees	51- 300	11- 50	less than 10
Service Sector	Annual turnover	Rs. Mn. 251-750	Rs. Mn. 16-250	Lower Rs. Mn. 15
	Number of Employees	51- 200	11 -50	less than 10

Source: National Policy Framework for Small Medium Enterprise Development (2015)

The objectives of this study are three-fold: to analyse global literature of drivers and barriers for sustainable adaptation development, to identify the nature of the relationship and its profuse types and pinpoint the research gaps in terms of drivers and barriers in the sustainable development of SMEs.

The current research meticulously captures some dominant gaps in the existing literature and discloses institutional barriers and regulations barriers for SMEs' STD. It also describes the structured model to be utilised to review both institutional and regulatory drivers and barriers for the sustainable transition of SMEs in the final section.

3. Methodology

The literature review first focuses on the global and Sri Lankan Small and Medium Enterprises' sustainable adaptation development, and then on different components of the research questions. The terms of institutional and legislation barriers drivers in Sri Lanka were also reflected throughout the review.

The following research questions were evolved to perceive the objective: What are the types of institutional and legislation drivers? What are the types of institutional and legislation barriers? What are the less focused drivers and barriers in contemporary literature? What kind of driver actions are taken to enhance sustainability development?

First, the researcher performed an extensive web search and selected 260 journal publications and research articles for this review because data are obtained exclusively from a literature review survey. The literature disclosed eight types of drivers and ten types of barriers, and the researcher suggested a unique ideological framework to achieve the objectives of the literature-based study. Hence, it is necessary to amalgamate SMEs sustainability transition development. The overall

concept identified from this paper illustrates several drivers and barriers throughout the Sri Lankan SMEs sustainable adaptation development.

4. Results and Discussion

4.1 Institutional and legislation barriers recognised for sustainability of SMEs in Sri Lanka

The availability of literature in the area of institutional and legal barriers to sustainable transition development of SMEs make that area relatively rich. According to Lev et al. (1993), the leather industry in Sri Lanka has recognised three significant constraints, i.e., access to financial resources, non-financial resources, and the high cost. The research findings show that the primary impediments were the lack of finance and resources for the sustainable development of SMEs. Furthermore, the high rates of taxes were a major impediment for the small firms. The research focused on distinct sectors to devote more specific and detailed information about the barriers that SMEs face in the selected firms. However, the lack of updated data and the expense of conducting the required surveys limited the chance of using the results more broadly.

Pissarides (1999) determined whether the insufficiency of funds for green productions is the main barrier to SMEs' development. Research data gathered from the European Bank for Reconstruction and Development pointed out that insufficiency of financing became a barrier to SMEs sustainable adaptation due to market competitiveness, poorly developed capital, and where credit was granted according to historical working practice. Blackburn (2009) stratified the growth ways into incremental, rapid, and episodic and then investigated the collision of access to finance, market conditions, and management on expanding the business firms. The results show the expansion of SMEs was influenced by the insufficiency of modern machines, lack of qualified employees, lack of marketing strategy, and no advanced management skills. Van (1993) mentioned that SMEs with no proper communication system needs support from their relatives, friends, consumers, government, international agencies, and fund providers such as banks to enhance the sector by increasing entrepreneurs and SMEs.

The identified barriers have been classified as institutional barriers and legislative barriers using the existing literature (Table 2).

Table 2: Elements of Institutional and Legislation barriers for SMEs to sustainable adaptation development in Sri Lanka

S/No	Institutional Barriers	S/No	Legislative Barriers
BI 1	Lack of Organisational Resources	BL 1	Weak Legislation
BI 2	Lack of Financial Resources	BL 2	Lack of Environmental Enforcement
BI 3	Lack of Proper System of Getting Market Information	BL 3	Support from Regulatory Government Agencies
BI 4	Lack of Energy Transition	BL 4	Lack of Guidelines Implementation
BI 5	No Opportunity Entrepreneurs	BL 5	Lack of Knowledge About Policy Framework
BI 6	Lack of Risk Awareness & Management	BL 6	Negative Perceptions and Attitudes of Environmental Laws
BI 7	Cost of Waste and Hazardous Products Disposal and Improper Waste Management	BL 7	Lack of Local Authority Compliance Controls
BI 8	Low Public Pressure	BL 8	Absence of Environmental Impacts Assessments
BI 9	Lack of Market Availability & Competition	BL 9	Lack of Qualified Policy Makers
BL 10	Lack of Government Support for National Innovation Strategy	BL 10	Lack of Environmental Licence

Source: Author's literature survey findings (2021)

4.2 Institutional Barriers

BI 1. Lack of organisational resources: This research emphasizes many SMEs in Sri Lanka suffer a lack of organisational resources, such as lack of modernisation of machinery for product development, absence of labourers and innovators, absence of skilful managers, use of inferior products materials (Gamage, 2003).

B1 2. Lack of financial resources: The most prominent issues the small-scale business owners face in Sri Lanka are the high cost of finance and the insufficiency of institutional support in financing (Karunanayake, 1999).

BI 3. No proper system of getting market information: The unavailability of an appropriate system of obtaining market information to SMEs is a common problem in Sri Lanka. According to Gamage (2003), there is no adequately coordinated network that furnishes marketing information and assistance to SMEs in Sri Lanka.

BI 4. Lack of Energy transition: This study elaborates that the government can help enhance the contribution of SMEs to the energy transition, primarily via policy

measures such as performance audits and network access. Sri Lanka inevitably needs any intricate research and development.

BI 5. No opportunity entrepreneurs: Sri Lankan entrepreneurs are found as Fabian or Drone entrepreneurs, which means they do not innovate anything. It shows that Sri Lankan entrepreneurs lack innovation skills, and they do not innovate. This fact shows the lack of innovative culture among Sri Lankan entrepreneurs.

BI 6. Risk awareness and risk management: According to Henchel (2008), small and medium-sized business firms face more challenges than large firms when it comes to risk management. According to Jayathilaka (2012), they do not have the necessary resources concerning human resources, databases, and specificity of knowledge to carry out a structured and standard risk management.

BI 7. Cost of waste and hazardous products disposal and improper waste management: The problem of improper waste management has become a global issue and a hurdle to the sustainable growth of SMEs. Basically, waste management is divided into two, preventive actions and corrective actions. Waste management, recycling, reduction of hazardous waste, and treatments can be identified as corrective actions. All business firms could apply these actions after some pollution happened in the business environment. Preventive actions are waste reduction, reuse of waste disposal, and the end-of-life cycle management process. The company production processes influence these activities.

BI 8. Low public pressure: Malwenna (2019) found that the low public pressure in Sri Lanka poses the biggest issue on SMEs in the country. There needs to be some pressure from the key social roles like local communities, NGOs, banks, media, insurance companies, or politicians. All over the public pressure and government policy makers want to introduce stick regulations for SMEs. High public pressures supporting process for firms' stakeholders also facilitate in obtaining advantages (Malwenna, 2019).

BI 9. Lack of Market facilitation and skill development: The development of market mechanism is less toward market facilitation and skill development because they have no strategic market strategies that have the resources and expertise to inspire the SME Sector's standing in Sri Lanka. Small-scale farmers, micro-entrepreneurs, and self-employers find it difficult to find a market.

BI 10. Lack of government support for national innovation strategy and innovation policy: The sustainable development of SMEs has attenuated by the lack of support of the government rules in Sri Lanka. The governments have mainly focused on providing funds for SMEs but neglected to develop the innovative system by promoting the research and development sector of SMEs in Sri Lanka. This, in turn, requires more enhanced capability, resources, and capacity of scientific manpower and better labs and equipment.

4.3 Legislation Barriers

BL 1. Weak legislation: There is no proper legislative definition for SMEs at present, and different institutions have given different definitions. These lead to various problems in implementing the government policy for the growth of SMEs. The Sri Lankan government has not identified the urgent requirement of developing legislative supports. Also, there is no clear enforcement such as providing incentives, assistance, and tax concessions to SMEs on a consistent, continuous basis, and no clear packaging services.

BL 2. Low environmental enforcement: An efficient functioning programme is absent in the Sri Lankan SMEs directives and policy standards to save natural resources by focusing on reducing waste, recycling materials and reusing resources to banish excessive product and packaging waste.

BL 3, 4. Lack of support from regulatory government agencies and lack of guidelines:

Even though Sri Lanka gives high priority to enhancing the SME sector, it does not involve a good integral part of an overall industrialisation policy. It has not recognised the strengths, threats, weakness, and opportunities (Thrikawala, 2011). The SMEs of Sri Lanka are relatively knowledgeable and have visions, views, and attitudes regarding environmental pollution problems. Still, in the country, SMEs have no good network or linkages among the industries and other stakeholders.

BL 5. Lack of knowledge about policy framework: SME policy framework must pay exceptional attention to develop nature's capital, craft sector, women entrepreneurship, green growth, strengthening handicraft villages, enterprise villages, industrial production villages, and SME industrial estates/zones. The government support must prioritise the committed, capable, and interested entrepreneurs with a sensibly good track record.

BL 6. Negative perceptions and/or attitudes of environmental law: According to Ghazilla et al. (2015), there is a general lack of regulatory contact, either because SMEs do not want to initiate contact and/or because direct face-to-face regulator contact/enforcement action reduces the environmental legislation not being effectively implemented or having much influence on SMEs. This leads to those SMEs towards negative attitudes and/or perceptions of environmental laws. It pinpoints that more effective enforcement is essential for developing SMEs' attitudes and perception of the environment.

BL 7. Lack of recent policy changes related to SMEs: The prevailing policy framework is not favourable and not well focused on expanding opportunities for enhancing rural employment in the country. The government policies of Sri Lanka do not facilitate SMEs to access reliable and sufficient information, which lead to prepare more rational decisions, safeguarding transactions from opportunism, and identifying suitable governance mechanisms. There is a neglecting nature of SMEs policy change on supporting formal governance; instead, they have encouraged

relational governance to some extent only for selected SME, which obstruct the development of SMEs across the country.

Table 3 summarises the identified institutional and legislative drivers for the sustainable adaptation development of SMEs based on the existing literature.

Table 3: Types of Institutional and legislation drivers for SMEs to sustainable adaptation development in Sri Lanka

	Institutional Drivers		Legislative Drivers
DI 1	Green Technology, Innovation & Energy Efficiency	DL 1	High Law Enforcement of SMEs Related Laws
DI 2	Improvement of Infrastructures	DL 2	Corporate Governance Practices and Policies
DI 3	Awareness and Communication of Local Customers in Green Manufacturing Practices	DL 3	Voluntary GMP Regulations and Standard (e.g., ISO 14000 & Eco Labelling)
DI 4	Governmental Incentives Support	Dl 4	Compulsory GMP Regulation Mandated by Local Government
DI 5	Strategic Organizational Networks	Dl 5	Updating Current Policies and Emission Reduction
DI 6	Reduction Market Failures and Improve Market Opportunities Improvements	DL 6	Environmental Impacts Assessments Score
DI 7	Top Level Management & Brand Management	DL 7	Employee Attitudes Towards Compliance with Environmental Laws/Policies
DI 8	Entrepreneurship Development	Dl 8	Implementation Of Environmental Protection License Scheme

Source: Author's literature survey findings (2020)

4.4 Institutional Drivers

DI 1. Technology improvements: The following four areas, i.e., manufacturing facilities, operational processes, production technologies, and management-oriented factors, can be appertained to environmental technologies to a green manufacturing system. Some studies evolved a general point in using green or environmental technological innovation to measure sustainable growth, thus implicitly supposing technology to be a driver of green growth (e.g., Kijek & Kasztelan, 2013; Samad & Manzoor, 2015; Sueyoshi & Goto, 2014). The assumption may be used, and unforeseen on different contexts, but the studies provide theoretical and explanatory empirical evidence that investments in a technological swap and innovation in

specific fields are major drivers of green growth (e.g., Böhringer et al., 2012; De Medeiros et al., 2014; Musolesi & Mazzanti, 2014; Woo et al., 2014).

DI 2. Improvement of infrastructures: From 2017 to 2020, the government carried out a national programme launched in 2017 to work on exporters. A series of activities were performed under this programme; some as facilitation for setting up infrastructure facilities lands/industrial estate, facilitation for bank financing, facilitation for technology transfer/sourcing of machinery/training and market development, as identified, followed up, and monitored. The researcher suggested that an approach based on a private and public partnership may be needed to prop up a responsive and sustainable institutional support structure. Internal and external factors affecting adoption of more environmentally-responsible actions. Responsible of SME sector have good advocacy, policy and related sector promotion activities.

DI 3. Awareness and communication of local customers in green products: The researcher stated that reverse logistics activities include rectifying failed items, recycling and reusing materials, and packing materials. Muma et al. (2014) claimed that reverse logistics refers to the role of logistics in source reduction, recycling, product returns, waste disposal, material substitution, reuse of materials, repair, and remanufacturing. The firms that perform their jobs with eco packaging and design plan to manufacture products and packaging by minimal consumption of materials and energy. Besides, firms are encouraged to ease the reuse, recycle, and recover component materials and parts (Diab et al., 2015).

DI 4. Improvements of government support:

SMEs need assistance from institutions to overcome some growth barriers. The provision of information, advice, and training services are some ideal assists that the local institutions and agencies can supply. Various discriminatory legal regulations and inappropriate tax systems are a burden for SMEs, and complicated laws, rules, and regulations related to SMEs could be tough on small and growing entities. It provides an incentive for entrepreneurs to find ways to evade regulations leading to the growth of the grey economy (Horan, 2011). "A road map to digital highway" is a motto Sri Lanka follows as they wish to ride high on the electronic highway and stimulate e-commerce. This is conducted by the government's e-Sri Lanka vision, championed by the SME sector in developing Countries (Gamage, 2003).

The present government of Sri Lanka gives some priority to enhance the country's SME sector. Governmental, non-governmental, NGOs, financial, national, and international institutions came to power of SMEs from time to time to attain the SMEs (Priyanath & Premaratne, 2014). The "Saubhagya COVID-19 Renaissance Relief" scheme through Licensed Banks at 4% annual interest rate for 20,240 SMEs affected by COVID-19 has approved 55 billion rupees. It is targeted at reviving the affairs of the economic development introduced by the Central Bank of Sri Lanka under the guidance of the Sri Lankan government. Thus, the government can give priority to the SME by improving the overall performance of the sector.

DI 5. Strategic organisational networks: The research findings disclosed that SMEs maintain two types of network relationships. The first one is social network relationships, and it contains family, friends, relatives, and acquaintances. The second one is organisational networks. It resides in supporting networks such as banks, government bodies, Non-Governmental Organisations (NGOs), other SME supporting institutes, and inter-firm network relationships such as relationships with large-scale organisations or SMEs. Due to a lack of financial resources in setting up and running information systems, most SMEs do not perform efficiently (Priyanath & Premaratne, 2014). SMEs need information systems for cost-effective and faster means of communication and to run the business efficiently. The emerging evidence shows that the usage of information systems may help to find raw materials for their products, find buyer markets for their finished products, and staying well-informed about environmental conditions, such as market trends, availability of financial resources of efficient technology/machinery, and government policies and initiatives. According to Malwenna (2019), it can reasonably be assumed that there is a vast opportunity for growth in this sector and that it is imperative to saddle the full benefits of the sector to the domestic economy with the help of networking and forming peer groups for better haggling from large enterprises.

DI 6. Reduction of market failures and improve market opportunities: Hemachandra and Kodithuwakku (2006) stated that market orientation among resource-limited rural farmers in Sri Lanka was relatively poor. SMEs faced some market failures, and linking resource-limited farmers to markets generates new opportunities for them. According to IFAD (2012), some farmers and farmer groups in the upcountry in Sri Lanka, who are cultivating vegetables, have accepted the SMEs' initiatives for establishing such links (to convert farming into a competitive and fast-moving sector in Sri Lanka). They have realised that one such initiative is the public-private partnership to bring public institutions, private companies such as popular supermarket chains, and farmers together to guide the farmers to modernise the farming culture of the country (IFAD, 2012).

DI 7. Top-level management & brand management: Professional and skills of brand management are other drivers. Also, it is a good attempt for SMEs' sustainable growth. Boatwright et al. (2009) emphasised that business managers and marketing officers have realised that brands are only valuable when they possess value to their customers. Therefore, building a brand to satisfy customer value is a primary goal to accomplish and gain market share.

Nevertheless, drivers for SMEs are how to create a brand identity that entirely meets the needs of existing and new customers but also can be consistent with product attributes simultaneously. For the sustainable growth of SMEs in Sri Lanka to succeed in current legal and policy statements, the enforcement and updating of good management practices are the critical success factors. Thus, SMEs in Sri Lanka should focus on top-level management and sustainable green human resources management. It must deal with almost all the stakeholders, functions, manager/owner, employees, and customers for decision-making. If the SMEs desire significant benefits, they can include these functions.

DI 8. Entrepreneurship development: Empirical evidence reveal that SMEs are essential for creating employment opportunities for others, self-employment, and increasing GDP growth, contributing to export earnings, poverty alleviation of the country, and providing livelihoods to stakeholders. It must address skilful manpower as per the sector's demands, enhancing productivity and product quality by adopting new technologies, increasing investment capacity, and providing product-specific manufacturing skills to the youth by generating and maintaining an activating environment through harmonisation of government policies. As a developing country, Sri Lanka has contributed to entrepreneurship as a major concept of sustainable economic development. Nevertheless, the country has not made a genuine benefit of entrepreneurship on economic development. It is a severe issue in the economy of Sri Lanka, and as a result, it has impacted more unemployment issues with very low economic growth (Prasanna & Ekanayake, 2019).

4.5 Legislation Drivers

DL 1. High law enforcement of SMEs-related laws: SMEs in Sri Lanka may have some institutional and regulation drivers and barriers for a sustainable transition. Its results lead to a list of institutional and regulatory drivers and barriers for SMEs. Four institutional and five regulation drivers and barriers appear to be highly disadvantageous to SME's sustainable transition effort: technological complexity of energy solutions, insufficient financial resources, high market competition, and low legitimacy of renewable energy solutions. The ambition of this driver goal is to help new enforcement and updated current SMEs standards, rules, policies, and regulations. It assists in enhancing market competitiveness, becoming sustainable in transition development, improving the more effective use of the green manufacturing system, making environmental standards and a suitable waste management system. It can only be attained if all the relevant roles in the public, private, and civil society sectors make sustained endeavours to fill the gap in low awareness of, access to, and use of the green policy system by inventors, entrepreneurs, researchers, and SMEs. There are very limited number of researches to study high law enforcements drivers on the sustainable development of SMEs in Sri Lanka. Overarching institutions governing the fertility behaviour of adults, who generally accept an enhancement of their economic situation to come along with a lower quality of the natural environment for their children at a latter part in time, planned by Constant et al. (2014). So that this driver is tested in its validity, policy is measure for sustainable development.

DL 2. Corporate government practices and policies: Corporate governance practices and policies are a set of processes, policymakers, customs, laws, stakeholders, and institutions affecting how a corporation is controlled, administered, or directed. Over-sighting of the company following the principles of responsibility, transparency, and long-term management comprises corporate governance.

Corporate governance mechanisms are known as the mechanisms that protect the shareholders' interests. Good corporate governance helps in sustainability. In developing a market economy and promoting economic growth, good governance is

always important in emerging and transitioning economies (Judge et al., 2003; McCarthy and Puffer, 2003). Some SMEs managers may also manage their companies as if it were only their stakes that were involved and satisfying their own interest to the impairments of other main stakeholders and the company as a whole. SMEs may, however, be less likely to have resources to accomplish corporate governance developments (Ghazilla et al., 2015). Therefore, it is momentous to make the public aware of promoting the understanding of principles of good governance in SMEs.

DL 3. Voluntary GMP regulations and standards (e.g., ISO 14000 and Eco Labelling):

According to Hosseini (2007), the worldwide certification of ISO 14000 had enlarged more than ten times from 1997 to 2002. Sri Lankan governments implemented ISO 14000 standards and addressed many aspects of environmental management for SME sectors. ISO 14001:2004 and ISO 14004:2004 standards deal with environmental management systems (EMS), ISO 14001:2004 gives the requirements for an EMS, and ISO 14004:2004 provides general EMS guidelines for services sectors. Voluntary Green Manufacturing regulations, standards, and guidelines in the family address particular environmental aspects, including monitoring, eco-labelling, performance evaluation, LCA, communication, and auditing. It evaluates the environmental impact assessments of firms and their products. It is designed to set targets, document policy and procedures, develop them, prioritise environmental response plans, execute ongoing measurements against targets, and provide guidelines for internal auditors.

DL 4. Compulsory regulations mandated by local government: In cases of market failures, market-based principles, incomplete tax, and strict orders of government can play a strategic role in enhancing the SME sector. Government regulations can measure the problems of SMEs. In promoting SMEs, they should focus carefully and aim to make work efficient and provide incentives for the private sector to assume an active role in SME. Moreover, it improves the perception among entrepreneurs of the range of financing options available from private investors, official programmes, and banks. Government regulation is necessary, and national policies should encourage manifold forms of institutional savings. Institutional investors should be regulated, and flexibility for the environment enables the sustainable development of the firms.

DL 5. Updating current policies and emission reduction: According to Pushpakumari and Watanabe (1992), if the current laws and policies are updated from a well-affected discrepancy among business activities and personal viewpoints, as a result where environmental policies are undertaken, they tend to be primarily reactive in nature, one-off, and focus on emission depletion ("end-of-pipe treatments") rather than on pro-active pollution depletion measures. Many SMEs in Sri Lanka tried to use and concentrate on eco-based solutions and substantial changes in material, production processes or operations management, and materials recycling process. This is the role of legislation in driving and intimation of sustainable growth. Legislations draw certain recommendations and policy adjustments of different levels

of governance on SMEs. Global environmental policy in the last decades has resulted in a structural break in the global carbon dioxide emissions in economic development relation so that firms and their stakeholders must be aware of organising board meetings. The current awareness and environmental practices are adopting environmental policies, standards, directives, and ISO 140001, EMS. Moreover, despite such enormous emphasis on current laws and in accordance with the fact that proactive policy, in general, is a crucial driver of green growth, the distinct effects of specific policies may not always be easy to extricate.

DL 6. Environmental impacts score*:* Assessing the environmental impact can be identified as one of the analytical tools for scrutinising the possible environmental consequences of implementing projects, activities, programmers, and policies (Ngniatedema Li & Illia, 2014). When it comes to accustom the fact that some companies operate in more than one industry, Truscott uses a benchmarking system for each of those sectors from publicly revealed environmental data (e.g., the EPA Toxics Release Inventory). Truscott also scrutinised the quality of any data from outside before using it (Ngniatedema, Li & Illia, 2014).

DL 7. Employee attitudes towards compliance with environmental laws/policies: In Sri Lankan economic industries, green policies play a vital role. That kind of policy is critical for every firm's statement about the commitment to sustainability and environmental management that business plans to make (Ngniatedema, Li & Illia, 2014). Mainly, the directives show employees and customers that maintaining environmental issues is a company's high priority. Green produces, green use, green process, and green end-of-life management are compromised in green policies (Bhattacharya, Jain, & Choudhary, 2011).

DL 8. Implementation of environmental protection license scheme: In Sri Lanka, the Environmental Protection License (EPL) is considered a regulation/legal tool under the amenities of the "National Environmental Act No: 47 of 1980" amended by Act Number 56 of 1988 and Act Number 53 of 2000. On 25.01.2008, industries and activities, which needed an EPL have mentioned in Gazette Notification Number 1533/16 dated. Those industries are categorised under three lists: List "A", "B", and "C" depending on their pollution probability- Part A: 80 significantly high polluting activities, Part B: 33 numbers of medium level polluting activities, and Part C: 25 low polluting industrial activities. The Local Authorities in Sri Lanka carry out complications of EPLs and related functions such as follow-up, rules and monitoring, and directives implementation.

4.6 Less focus barriers and drivers in the literature

As a developing country, Sri Lanka is facing numerous hurdles to achieve sustainable development. According to the available literature, the country primarily confronts institutional barriers and legislation barriers. The role of the Sri Lankan government is vital as they are integrating SMEs into the international supply chain. They have created small business administration responsible for assisting SMEs; business associations can be encouraged to accept some of this responsibility.

According to Malwenna (2019), the government has a weak incentive supporting process for SMEs stakeholders and facilitates accessing financing. Also, the SMEs in Sri Lanka are suffering from some tax such as importation of pharmaceutical machinery and spare and equipment for bakery products, manufacture of footwear, bags, unprocessed agriculture, and fishing, plastic products, machinery to produce rubber, moulding (glass, steel, rubber, and plastic), and items needed in the poultry industry. The available literature indicates that the weightage on drivers and barriers in Sri Lanka is less than in the other countries. One of the main reasons for that is, although the government has taken some actions to overcome these barriers, the execution part does not happen as previously planned.

4.7 Driver actions to promote sustainability development

It is momentous for SME firms to be sustainability tory challenges. However, the importance of economic, environmental, and social dimensions differs from time to time and in relation to transition development in choosing appropriate and correct drivers to work out the SMEs financial, institutional, and regulation to different criteria. According to the past literature, the study has identified several drivers to overcome the institutional and legislative barriers to sustainable development. The identified facts have been elaborated using a framework as in Figure 1.
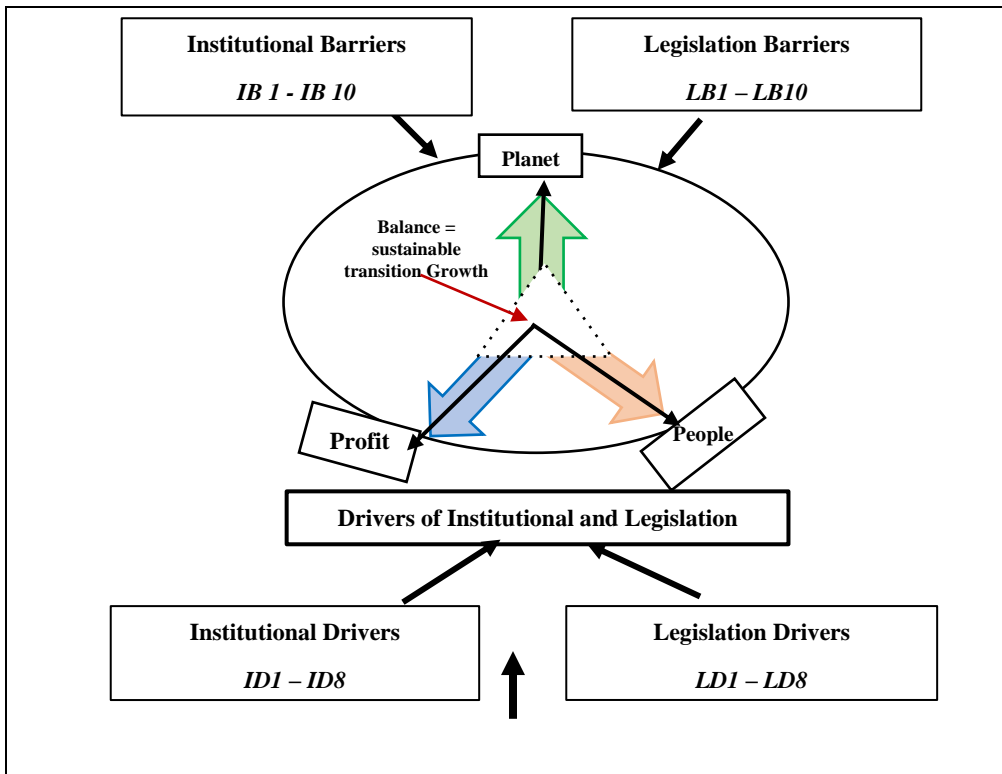

Figure 1: Towards a framework for SMEs' sustainable adaptation development

5. Conclusion

The SME sector is an effective tool for poverty alleviation and inclusive economic growth in Sri Lanka. Government regulations and promotions are dominant factors for the effective implementation of policies and regulations. The SME sector feels burdened with current rules and regulations, and they are not helpful to enhance SME performance. The researcher faced some difficulties finding empirical evidence in the Sri Lankan context to justify this adverse situation because of a deficiency of research and development. Therefore, the availability of literature is limited. According to the global and Sri Lankan evidence, researchers recognised institutional and legislative barriers result in a noteworthy negative relationship on SMEs sustainability, but institutional and regulations drivers result in a significant and positive relationship on SMEs. Researchers also find out structured research frameworks and tried filling gaps of literature on institutional and regulatory drivers and barriers to SMEs sustainability growth. Moreover, the study suggested the above framework for SME firms becoming progressively essential and appropriate in enhancing sustainability development in Sri Lanka. The findings of this literature-based study laid the foundation for further investigations for researchers of drivers and barriers for sustainable adaptation development of SMEs in an empirical context, which undoubtedly helped to find out the case-specific and specific drivers and barriers for sustainable growth of SMEs.

References

Bhattacharya, A., Jain, R., & Choudhary, A. (2011). Green Manufacturing Energy, Products and Processes.

Blackburn, R., & Brush, C. (2009). *Understanding the challenges to growth in entrepreneurial firms: cases from the UK and USA* [Paper presentation]. XXIII RENT conference, Budapest, Hungary. https://livrepository.liverpool.ac.uk/id/eprint/3105941

Boatwright, P., Cagan, J., Kapur, D., & Saltiel, A. (2009). A step-by-step process to build valued brands. *Journal of Product & Brand Management*, 18(1), 38-49.

Böhringer, C., Balistreri, E. J., & Rutherford, T. F. (2012). The role of border carbon adjustment in unilateral climate policy: Overview of an Energy Modeling Forum study (EMF 29). *Energy Economics*, *34*, S97-S110.

De Medeiros, J. F., Ribeiro, J. L. D., & Cortimiglia, M. N. (2014). Success factors for environmentally sustainable product innovation: a systematic literature review. *Journal of Cleaner Production*, *65*, 76-86.

Diab, S. M., Al-Bourini, F. A., & Abu-Rumman, A. H. (2015). The impact of green supply chain management practices on organizational performance: A study of Jordanian food industries. *J. Mgmt. & Sustainability*, *5*, 149.

Gamage, A. S. (2003). Small and medium enterprise development in Sri Lanka: a review. *Masuki Ronso*, *3*(4), 133-150.

Ghazilla, R. A., Sakundarini, N., Rashid, S. H., Ayub, N. S., Olugu, E. U., & Musa, S. N. (2015). Drivers and barriers analysis for green manufacturing practices in Malaysian SMEs: A Preliminary Findings. *12th Global Conference on Sustainable Manufacturing*, (pp. 658 – 663). Malaysian.

Hemachandra, D., & Kodithuwakku, S. S. (2006). Business orientation among poor dry zone farmers in Sri Lanka. *Sri Lankan Journal of Agricultural Economics*, *8*(1381-2016-115725), 31-49.

Henschel, T. (2008). *Risk Management Practices of SMEs Evaluating and Implementing EffecTIVE Risk Management System.* Erich Schmidt Verlag Berlin.

Horan, G. O. (2011). Exploring management perspectives of branding in service SMEs. *Journal of Services Marketing*, 25(2), 114-121.

Hosseini, A. (2007). Identification of green management system's factors: A conceptualized model. *International Journal of Management Science and Engineering Management*, *2*(3), 221-228.

International Fund for Agricultural Development FAD (2012), "Making a difference in Asia and the Pacific – Sri Lanka: supporting public-private partnerships", Newsletter, Issue 2, Rome, available at: www.ruralpovertyportal.org/ documents/654016/632631/DLFE-3826.pdf/88dd5c8d-5910-42e7-9144-d4003914941f? version¼1.0

Jayathilaka, B. (2012). Risk Management Practices in Small and Medium Enterprises: Evidence from Sri Lanka. *International Journal of Multidisciplinary Research*, Vol. 2 Issue 7, Issn 2231 5780.

Judge, W. Q., Naoumova, I., & Koutzevol, N. (2003). Corporate governance and firm performance in Russia: An empirical study. *Journal of world business*, *38*(4), 385-396.

Karatayev, M., Hall, S., Kalyuzhnova, Y., & Clark, M. L. (2016). Renewable energy technology uptake in Kazakhstan: Policy drivers and barriers in a transitional economy. *Renewable and Sustainable Energy Reviews*, 120-166.

Karunanayake, R. (1999). Effective strategic issues for the development of small and medium enterprises (SMEs) in Sri Lanka: special reference with fish processing industry in Sri Lanka (Doctoral dissertation, 大阪市立大学).

Kijek, T., & Kasztelan, A. (2013). Eco-innovation as a factor of sustainable development. *Problenmy Ekorozwoju - Problems of Sustainable Development*, *8*(2), 103-112.

Kodippiliarachchi, P., Priyanath, H., & Premarathna, S. (2017). Role of SMEs in Industrial Development in Sri Lanka. In *CURRENT STATUS OF INDUSTRY: ISSUES AND CHALLENGES.* Sri Lanka: Sri Lanka Economic Association – Annual Sessions.

Lev, L. S., Grath, D. M., Murray, H., & William, R. D. (1993). Organizing and Conducting Farmer- Scientist focus sessions. *Journal of Natural Resources and Life Science Education*.

Malwenna, K. (2019). Application of Information Systems in Small and Medium Enterprises in Sri Lanka. *International Conference on Business Research.* Sri Lanka: University of Moratuwa.

Mazzanti, M., & Musolesi, A. (2014). Nonlinearity, heterogeneity and unobserved effects in the carbon dioxide emissions-economic development relation for advanced countries. *Studies in Nonlinear Dynamics & Econometrics*, *18*, 521-541.

McCarthy, D. J., & Puffer, S. M. (2003). Corporate governance in Russia: A framework for analysis. *Journal of World Business*, *38*(4), 397-415.

Ministry of Industry and Commerce. (2017). National policy framework for small & medium enterprises 2017. Retrieved from http://www.sed.gov.lk/sedweb/en/wp-content/uploads/2017/03/SME-fram-work_eng.pdf

Muma, B. O., Nyaoga, R. B., Matwere, R. B., & Nyambega, E. (2014). Green supply chain management and environmental performance among tea processing firms in Kericho County-Kenya. *International Journal of Economics, Finance and Management Sciences*, *2*(5), 270-276.

Ngniatedema, T., Li, S., & Illia, A. (2014). Understanding the impact of green operations on organizational financial performance: an industry perspective. *Environmental Quality Management*, *24*(1), 45-59.

Paula, F. D., Steinhauser, V. P., & Soares, T. (2020). Internationalization of SMEs: a systematic review of 20 years of research. *Journal of International Entrepreneurship*.

Pissarides, F. (1999). Is lack of funds the main obstacle to growth? EBRD's experience with small- and medium-sized businesses in Central and Eastern Europe. *Journal of Business Venturing*, Vol 14(5), 519-539.

Priyanath, H., & Premaratne, S. (2014). Government SME Development Programs in Sri Lanka: A Review in the Lens of Transaction Cost Economics. *Sabaragamuwa University Journal*, Volume 13 Number 2; pp 59-81.

Pushpakumari, M., & Watanabe, T. (1992). Do strategies improve SMEs' performance? An empirical analysis of Japan and Sri Lanka. *Meijo Asian Research Journal*, Volume 1 Number 161-75.

Rehman, M. A. A., & Shrivastava, R. L. (2013). Development and validation of performance measures for green manufacturing (GM) practices in medium and small scale industries in Vidharbha region, India. *International Journal of Society Systems Science*, *5*(1), 62-81.

Samad, G., & Manzoor, R. (2015). Green growth: important determinants. *The Singapore Economic Review*, *60*(02), 1550014.

Shinozaki, S. (2012). *A new regime of SME finance in emerging Asia: Empowering growth-oriented SMEs to build resilient national economies* (No. 104). ADB Working Paper Series on Regional Economic Integration.

Sivstava, S. K. (2007). Green Supply Chain Management: A State of Art Literature Review. International Journal of Management Review, 22(3), 256-277.

Sueyoshi, T., & Goto, M. (2014). Photovoltaic power stations in Germany and the United States: A comparative study by data envelopment analysis. *Energy Economics*, *42*, 271-288.

Thrikawala, S. (2011). Impact of Strategic Networks for the Success of SMEs in Sri Lanka. *World Journal of Social Sciences*, Vol. 1. No. 2. Pp. 108 - 119.

Van, D. (1993). Small Enterprises and the Process of Globalization and Regional Integration. Small Enterprise Development. *An International Journal*, 4(3), 4-13.

Velnamby, P. T. (2017). An Analysis of Dividend Policy and Market Value of Listed Manufacturing Companies in Sri Lanka. *International Journal of Scientific & Engineering Research*, Volume 8, Issue 6, 214.

Weerasiri, S., Zhengang, Z., & Perera, T. R. (2012). Innovation and creativity of small and medium scale enterprises (SMEs) in Sri Lanka: A Review. In *International forum of researches students and academics*, 2(1), p. 7.

Woo, J. Y., Kim, K. K., Lee, J., Kim, J. T., & Han, C. S. (2014). Highly conductive and stretchable Ag nanowire/carbon nanotube hybrid conductors. *Nanotechnology*, *25*(28), 285203.

The Female Labour Force Participation and Long-run Development; Evidence from Sri Lankan Experience

S.A.U. Niranjala [1*], H.A.B.W. Hettiarachchi [1]

[*] *Correspondence: niranjala@ssh.rjt.ac.lk*

[1] Department of Economics, Faculty of Social Sciences and Humanities, Rajarata University of Sri Lanka, Sri Lanka

Abstract

The female labor force plays a substantial role in the economic development of a country. The investigation of this study was to find the relationship between economic development and female labor force participation in the case of Sri Lanka from 1990 to 2019. The data was gathered from the World Development Indicators database, and Central Bank Reports in Sri Lanka. Unit root tests, the ADF and PP unit root tests, have been applied to test the stationarity properties of the variables. The ARDL cointegration method examined the long-run relationships between economic development and female labor force participation. The findings confirm a U-shaped relationship between female labor force participation and economic development in Sri Lanka.

Keywords: *Co-integration, Economic development, Female labor force participation, Sri-Lanka, Unit root.*

1. Introduction

Female labor force participation is one of the most promoting factors for inclusive growth in a country. A higher level of female labor force participation leads in achieving a higher level of economic development (Verick, 2018). The increase women participation in the labor force leads to increase economic growth establishing a long-run U-shaped relationship (Sinha, 1965). The argument behind this is that when a country is poor, women work only for necessity, mainly in subsistence agriculture or home-based production. As a country develops, economic activities shift from agriculture to industry, and it derives benefits for both men and women in the labor force. At a higher level of economic development, educational levels rise, and fertility rates fall. If so, women can take advantage of new jobs in the service sectors that are more family-friendly and accessible (Lechman and Kaur, 2015; Verick, 2018).

Even though the relationship between female labor force participation and economic growth is relatively stable, different research findings are available in other countries and groups of countries (Lechman and Kaur, 2015). Examination of the relationship between economic development and female labor force participation is essential for many reasons. First, the U-shaped relationship states that there is some trade-off between gender equality and economic growth in developing an economy. Second, understanding the relationship between female labor force participation and economic development is vital for scholars and policymakers to identify the trends in

participation in the female labor force and design and implement policies (Gaddis and Klasen, 2012; Chapman, 2015).

Considering the Sri Lankan contest, trends of female labor force participation rates have been particularly puzzling. Figure 1 shows that the female labor force participation rate is low compared to the male participation rate in Sri Lanka from 1990-2020. Moreover, Figure 1 shows a slight increase in the female Labor force participation rate from 2010 to 2020. The studies have explained several reasons behind this increase, including the increased school enrollment and more job opportunities for women. Fatima and Sultana (2009) prove that female labor force participation has a positive and strong relationship with economic growth. Female labor force participation is an important driver of economic development of a country (Boserup, 1970 ; Samarakoon, 2018). Therefore, this research aims to find the relationship between female participation and country development in Sri Lanka.
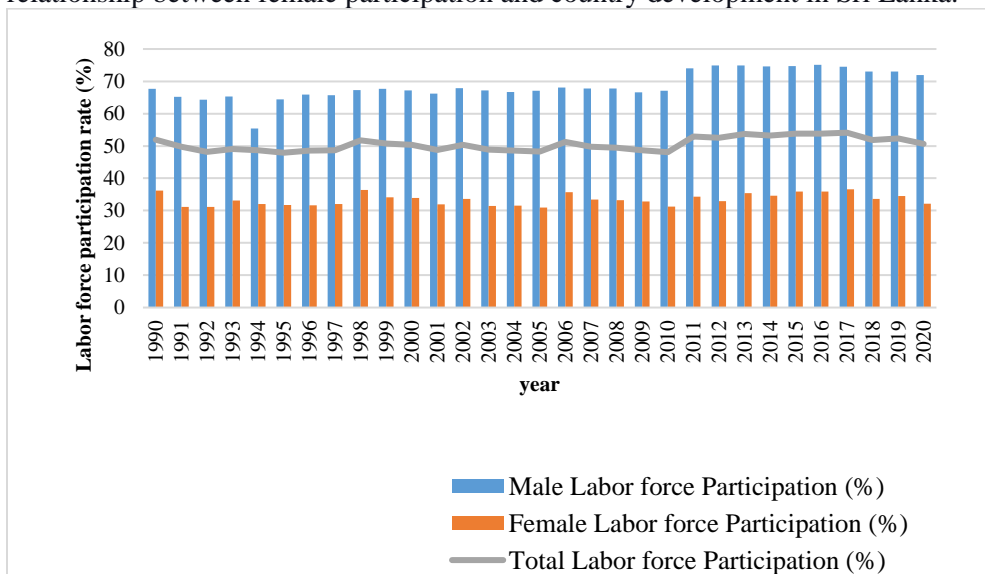
Figure 1: Gender inequalities in labor force participation rates in Sri Lanka (1990–2020)

2. Literature review

Investigating the relationship between economic growth and female labor force participation was treated as macroeconomics research and policy central subjects. There is no clear-cut definition of the relationship between economic growth and female labor force participation. There are many controversial issues and findings of this relationship. In literature, a considerable number of studies proved a U-shaped relationship between economic development and female labor force participation (Shahid, 2014; Lechman and Okonowicz, 2013; Olivetti, 2013; Tsani et al., 2013; Lohati and Swaminathan, 2016; Fatima &Sultana, 2009; Mujahid and Zafar, 2012). Mammen and Paxson (2000) provide evidence for the U-shaped theory in Thailand and India, using cross-country longitudinal data from 1970-1985. Lechman & Kaur

(2015) examine the relationship between economic growth and female labor force participation and show that the U-shaped hypothesis exists for countries with high-income levels, while it does not exist for low-income countries. In low income countries still female labor force participation is low compare to high income level countries (Lechman & Kaur, 2015).

In contrast, some studies found no U-shaped relationship between the economic development of the countries and the female labor force per capita (Tam, 2011, Lahoti and Swaminathan, 2013; Gaddis and Klasen, 2014). Gaddis and Klasen (2014) have also noted nonexistence of a U-shaped relationship among non-OECD countries using cross-country data from 1980–2005. In India, Economic growth has not been employment-intensive. Agriculture and manufacturing sectors are characteristically labor-intensive but have not controlled the overall economic growth. The service sector has been the critical driver of growth but requires high skills that most women do not possess (Lahoti and Swaminathan, 2013).

Moreover, it is essential to examine the factors that can increase female labor force participation in a country, as female labor force participation is an essential component in economic growth (Boserup, 1970). Multifaceted aspects determine women's employment participation: education level, social norms, economic growth, and job creation (Verick, 2018). Family related factors are more influential on female labor force participation rates than personal factors (Chen et al., 2014). Women's low education levels and flexibility in wages reduce women's participation in the labor force. Moreover, women with higher education levels can find jobs more effortlessly in the labor market (Hare, 2016).

3. Methodology

3.1 Data Collection
The study was entirely based on time series secondary data for the period covering from 1990 to 2019. Data for female labor force participation (FLFP) and Gross Domestic Per capita (GDP_p) were obtained from different sources.
FLFP is defined as the women's percentage of the total labor force in the country, age 15 years and over. It consists of employed plus unemployed (actively seeking work) female in the defined age category. The FLFP data were obtained from the Central Bank of Sri Lanka. GDP_p is defined as the gross domestic product divided by the mid-year population of the country, and to approximate the level of economic development, we used gross domestic product per capita based on purchasing power parity (PPP) at constant 2010 international $ (GDPpcPPP). GDPpc data was collected from World Bank open data repository.

Total fertility rate denotes the average number of children born to a woman if she were to live to the end of her childbearing years and bear children according to age-specific fertility rates of the specified year (Altuzarra et al., 2019). In addition to the fertility rate, the unemployment rate is also considered a control variable that affects FLFP. These variables were taken from the Central Bank Report (2020) in Sri Lanka. GDPp is considered an independent variable, and FLFP is regarded as the dependent variable. GDPp has been transformed into differentiated forms as logarithms are a

much more useful way to measure economic data. The resulting variables are denoted as Ln GDPp.

3.2 The model

There is a lot of literature to suggest the U-shaped relationship between economic development and female labor force participation (Verme, 2014, Gaddis and Klasen, 2013 and Tsani et al., 2013). Based on the general form of U-shaped relationship between female labor force participation and economic growth is modeled as follows (Eq.1):

$$FLFP = \propto + \beta_1 lnY + \beta_2 lnY^2 + u_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Where FLFP is female labor force participation (women's share in the country's total labor force-15 years and above), and Y is the level of economic development. The GDP per capita is used as a proxy for economic development (Chapman, 2015) and takes natural logarithms of national GDP per capita in constant 2010 US$. $LFFP$ is considered as the response variable, and lnY is considered as the explanatory variable. The U-shape hypothesis confirmed if the estimated coefficients are : $\hat{\beta}_1 < 0$ and $\hat{\beta}_2 > 0$. It means the U hypothesis holds; labor force participation will decrease initially with an increase in the per-capita net national domestic product ($\hat{\beta}_1 < 0$) and start increasing after attaining a certain level of development ($\hat{\beta}_2 > 0$). Therefore, it is more appropriate to use a fixed-effect estimator (Eq. 2).

$$FLFP_t = \propto + \beta_1 lnY_t + \beta_2 lnY_t{}^2 + \delta_t + u_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

Where, δ_t denotes time effect.

The fixed effects capture cultural, social, and other unobservable impacts on women's economic activities. While equation (2) accounts for fixed effects, it does not include potentially important model variables. Although the researcher couldn't include all variables in the model, fertility rate and unemployment rate have been included as control variables provided by the model employed by Altuzarra et al. (2019) and Cahpman (2015).

$$FLFP_t = \propto + \beta_1 lnY_t + \beta_2 (lnY_t)^2 + \beta_3 Fertality + \beta_4 Unemployment + \delta t + u_t \dots\dots(3)$$

The added control variables were fertility rate and unemployment rate. The U-shaped hypothesis holds if: $\hat{\beta}_1 < 0$ and $\hat{\beta}_2 > 0$. Altuzarra et al. (2009) show that the shape of the FLFP–GDP per capita relation may be different across groups of countries and individual countries because different groups of countries may be transiting on a different pattern of the U curve during the period considered. According to them, $\hat{\beta}_1 > 0$ and $\hat{\beta}_2 > 0$ for U-shape transitions, $\hat{\beta}_1 > 0$ and $\hat{\beta}_2 > 0$ for positive transitions and

$\hat{\beta}_1 < 0$ and $\hat{\beta}_2 < 0$ for negative transitions and also it is possible to find inverted U-shaped changes with $\hat{\beta}_1 > 0$ and $\hat{\beta}_2 < 0$.

Further considering the control variables, the researcher expects the coefficients on unemployment and fertility to be negative. Because these results would be consistent with the arguments made in the literature, is expected a negative relationship between fertility rate and FLFP. Because when socio-cultural attitudes change, the productive activity of women is more valued than their reproductive role. Result that, more women enter the labor market (Goldin, 1995). In addition to the fertility rate, the unemployment rate is an essential variable to describe the labor market situation; a high level of the unemployment rate, more women difficult to find a job. Therefore, unemployment would have a negative influence on FLFP (Ozerkek, 2013).

To find the long-run relationship between female labor force participation and economic development, scholars have employed the ARDL model (Mujahid N. and Zafar, 2012; Dogan & Akyuz, 2017). Therefore, this research also used the ARDL model to explain long-run relationships and short-run dynamics. Furthermore, this model is suitable for apply in a small sample (Pesaran et al., 2001). The specific ARDL model used in this analysis is expressed as follows (Eq.4).

$$\Delta FLFP_t = \beta_0 + \beta_1 LFP_{t-1} + \beta_2 lnY_{t-1} + \beta_3 lnY^2{}_{t-1} + \beta_4 F_{t-1} + \beta_5 U_{t-1} + \beta_6 T_{t-1} + \sum_{i=1}^{q_1} \gamma_1 \Delta LFP_{t-i} + \sum_{i=0}^{q_2} \gamma_2 \Delta lnY_{t-i} + \sum_{i=0}^{q_3} \gamma_3 lnY^2{}_{t-i} + \sum_{i=0}^{q_4} \gamma_4 \Delta F_{t-i} + \sum_{i=0}^{q_5} \gamma_5 U_{t-i} + u_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (4)$$

Where difference operator is indicated by Δ, T is trend variable and u_t is the residual term assumed to have a normal distribution with finite variance and zero means. $\beta_2 - \beta_6$ correspond to the long-run relationships and $\gamma_1 - \gamma_5$ show the short-run dynamics. The next step is to compute the ARDL F-statistic to examine whether cointegration between the variables exists or not.

After establishing the long-run relationship between economic development and female labor force participation, it is necessary to find the short-run impact of economic development on female labor force participation in Sri Lanka. Error correction method (ECM) can be applied to find short-run impact and ECM model as follows (Eq.5).

$$\Delta FLFP_t = \propto_0 + \sum_{i=1}^{q_1} \propto_{1i} \Delta LFP_{t-i} + \sum_{i=0}^{q_2} \propto_{2i} \Delta lnY_{t-i} + \sum_{i=0}^{q_3} \propto_{3i} lnY^2{}_{t-i} + \sum_{i=0}^{q_4} \propto_{4i} \Delta F_{t-i} + \sum_{i=0}^{q_5} \propto_{5i} U_{t-i} + \gamma ECT_{t-1} u_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (5)$$

Where, ECT_{t-1} is an error correction term that measures the speed of adjustment from short-run towards long-run equilibrium. γ is the estimate of lagged error term that captures the speed of adjustment. This ECM model elucidated those differences in female labor force participation are explained by differences in the linear (non-linear) term of real GDP per capita, differenced of fertility, differenced of unemployment rate plus error term, and stochastic term.

3.3 Estimation Methods

This paper applies the Bound test approach to the relationship and Autoregressive Distributed Lag (ARDL) model proposed by Pesaran et al. (2001). Since time series variables were used in the model, examining and confirming the variables' stationarity is necessary to avoid spurious regression in model estimation. To obtain reliable regression results, first, the model must be able to be subject to "spurious regression". Therefore, firstly, the study tests the nature of the time series to determine whether they are stationary or non-stationary. Unit root tests were used to estimate whether the time series data were stationary. When time-series data is non-stationary and used for analysis, it may give spurious results because estimates obtained from such data will possess a non-constant mean and variance. In this regard, Augmented Dickey-Fuller (ADF) and PP tests were used to test for unit roots. The Dickey-Fuller test was applied to both variables to detect if these variables were stationary or non-stationary. Both variables proved to be non-stationary; regression tests were applied to the first differences.

In the following, to find the relationships, Auto-Regressive Distributed Lags (ARDL) Bounds test was used to find cointegration between variables. The ARDL bounds testing approach to cointegration explained by Pesaran et al. (2001) does not require a unique integration order for cointegration estimation. The null hypothesis ($H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$) states that there is no cointegration and the alternative hypothesis ($H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0$) states that the existence of cointegration between variables. The long-run relationship is investigated by comparing the F- statistic with the upper and lower bounds of critical values. If the calculated F value exceeds the upper bound critical value at the considered significance level, it indicated a long-run relationship between variables to reject the null hypothesis. If the calculated F value is lower than the lower bound of bound critical value at the considered significance level, it indicated no long-run relationship between variables, as acceptation of the null hypothesis. However, F statistic lies between the upper bound of critical value and the lower bound of the critical value decision is inconclusive.

The next step is to find short and long-run elasticities using the ARDL-ECM model to determine the long-run relationships.

A model to be trusted must be robust. The robustness of an estimated model can be done using various diagnostic tests. The Breusch Godfrey serial correlation LM test, the Breusch–Pagan Godfrey Heteroskedasticity test, and the Jarque–Bera test are some of the tests encountered in these applications. CUSUM and CUSUM OF SQVARES tests were examined and analyzed to find stability.

4. Results and Discussion

4.1 Basic statistic results

Table 2 presented basic statistics of the selected variables. According to Table 1, the Sri Lankan female labor force participation is 33.7%. The maximum female labor force participation in Sri Lanka was 37%, and the minimum value of female labor force participation was 30.9%. In the same period, the average unemployment rate is at 8% in Sri Lanka. The maximum unemployment rate from 1990-2019 in Sri

Lanka was 15.9%, while the minimum unemployment rate reported at 4%. Meanwhile, the average female unemployment rate is 12.3%.

Table 2: Basic statistics of the model, 1990–2019.

Variable	Mean	SD	Min	Max
FFP	33.7	1.803636	30.9	37.00
GDP_P	2366.7533	928.79524	1189.66	4009.24
Fertility rate	2.2689	0.067380	2.188	2.48
Female Unemployment rate	12.3300	5.64197	6.30	23.40
Unemployment rate	8.0333	3.693175	4.00	15.90

FFP: Female Labour Force Participation; GDP_p: Gross Domestic Product per capita.

Before presenting the estimated results of the model, it is worth first focusing on the visual representation of the data. Figure 1 displays the scatter plots of the association between female labor force participation and GDP per capita for Sri Lanka. Figure 2 explains that Sri Lanka follows a slight U pattern over the period 1990–2016. This relationship can be explained by using an estimated model.
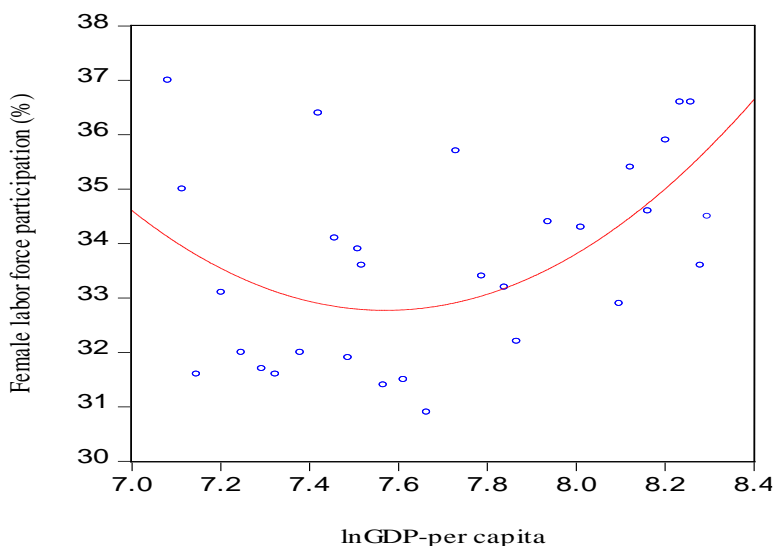
Figure 2: Female labour force participation versus GDP- per capita in Sri Lanka 1990-2019

4.3 Unit Root Analysis

Before testing cointegration, two-unit root tests (Augmented Dickey-Fuller (ADF) test and Phillips Perron (PP) test) were used to check the order of integration for each variable. The ARDL bounds testing approach assumes that the series under investigation should be integrated at I (0) or I (1). The results of ADF and PP unit root tests are detailed in Table 3

The results indicate that real GDP per capita has a unit root problem at the level with the trend and intercept. It means LnY is not integrated into I(0) but stationary at 1st difference indicated by statistics of ADF and PP unit root tests. It reveals that both variables are integrated at I (1). Further, the test results confirmed that no variables exceeded the order of integration I (1), and variables are a mixture of integration I (0) and I (1) and supports applying the ARDL approach to testing for cointegration (Pesaran et al.,2001).

Table 3: Unit root test results

ADF Test statistics (with Trend and Intercept)			
Variable	level	First difference	Order of Integration
LFP	-4.647914**(0.0045)	-4.446123**(0.0082)	I(0), I(1)
LnY	-1.761740 (0.6959)	-3.793985** (0.0321)	I(1)
LnY2	-1.782196 (0.6862)	-3.692495** (0.0397)	I(1)
Fertility	-0.881078(0.9421)	-5.326692**(0.0013)	I(1)
Unemployment rate	-0.843032(0.9493)	- 4.961255**(0.0023)	I(1)
PPT test statistics (with Trend and Intercept)			
Variable	level	First difference	Order of Integration
LFP	-5.082818**(0.0016)	- 12.59238***(0.0000)	I(0), I(1)
LnY	-1.727969 (0.7127)	-3.793985** (0.0321)	I(1)
LnY2	-1.765345 (0.6952)	-3.692495** (0.0397)	I(1)
Fertility	-3.805650**(0.0308)	-1.837774(0.6591)	I(0)
Unemployment rate	-9.903353(0.9421)	- 4.958531**(0.0023)	I(1)

Note: ** shows significance at 5%, *** shows significance at 1% ADF: Augmented Dickey-Fuller; PP: Phillips-Perron.
Source: Researcher calculation using E-Views 10.

4.4 Lag Length Criteria
Selecting of appropriate lag length before applying the ARDL test, as inappropriate lag length selection leads to a spurious outcome. Here, the applicable lag length of the variables was selected using the Akaike information criteria (AIC). The criteria show the top twenty models, as shown in Figure 3. The ARDL model proceeded with the lowest AIC (1,1,1,1,0) for this analysis.
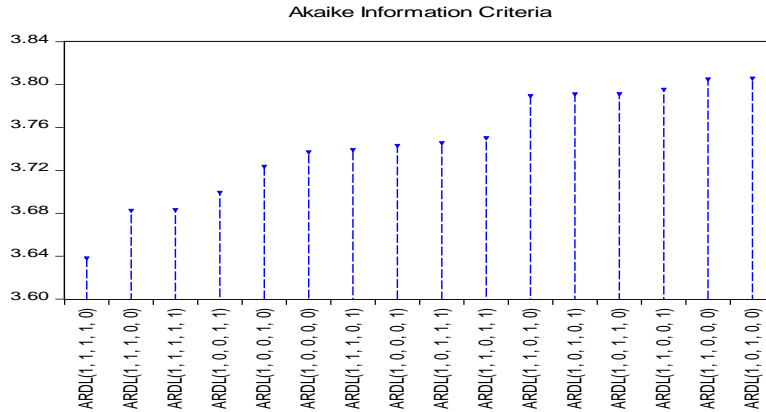
Figure 3. Lag length of each variable.
Source: Researcher calculation using E-Views 10.

4.5 ARDL Bounds Test

The bound test result for the ARDL model is shown in Table 4. According to the bound test null hypothesis (there is no cointegration among variables) is accepted if the calculated F value is below the lower bound. The null hypothesis is accepted if the calculated F value is higher than the upper bound. Therefore, according to the result Calculated F – statistic (6.690880) is greater than the critical value at 1%, 5%, and 10% for the upper bound I(1), then it is concluded that there is cointegration. The findings contain that long-run relationships exist among female labor force participation, GDP, fertility, and female unemployment rate in Sri Lanka.

Table 4: ARDL Bounds Test result

F-Bounds Test		Null Hypothesis: No Levels Relationship		
Test Statistic	Value	Significant Level	Lower Bound Value I (0)	Upper Bound Value I (1)
F-statistic K = 4	6.690880	10%	2.68	3.53
		5%	3.05	3.97
		1%	3.81	4.92

Source: Researcher calculation using E-Views 10.

4.6 Diagnostic tests results

Table 5 shows diagnostic tests for the ARDL (1, 1, 1, 1, and 0) model that is relevant to the study of the relationship between female labor force participation and GDP per capita. Breusch-Godfrey Serial Correlation Lagrange Multiplier test of serial correlation indicates that the residuals are not serially correlated. The normality test (Jarque Bera) highlighted that the hypothesis of normally distributed residuals could not be rejected, and the error is normally distributed. If the Jarque-Bera probability test is non-significant ($p > 0.05$), it tells that the distribution in the sample is not significantly different from a normal distribution (Field, 2005). Moreover, the

Breusch –Pagan- Godfrey test shows that the residuals have not Heteroskdasticity problem.

Table 5: ARDL (1, 1, 1, 1, 0) model diagnostic tests

	Diagnostic test	F statistic	Probability Value
Serial correlation	Breusch-Godfrey Serial Correlation LM Test	0.841101	0.3712
Normality	Normality Test (Jarque-Bera)	1.202218	0.548203
Heteroscedasticity	Breusch-Pagan-Godfrey	1.844306	0.1251

Source: Researcher calculation using E-Views 10.

(a)   (b)
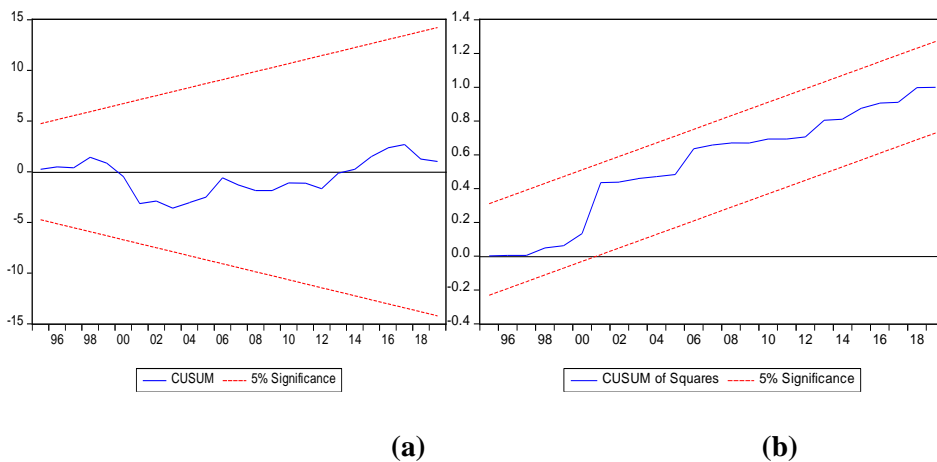
Figure 4. (a) Cumulative Sum (CUSUM); (b) Cumulative Sum of Squares (CUSUMSQ).

The CUSUM and CUSUMQ plots (Fig 4. a & b) from a recursive estimation of the model also indicate stability in the coefficient over the sample period. The stability of the model parameters was examined using statistics of Cumulative Sum of Recursive Residuals (CUSUM) and Cumulative Sum of Squares of Recursive Residuals (CUSUMSQ). If the statistics were between boundary lines drawn as two separate lines, the null hypothesis claiming stability of parameters would not be rejected. The results of these tests for model estimation are given in Figures 4 –a & b. According to the figures, the model is statistically stable, and the parameters corresponding to GDP, fertility rate, and the female unemployment rate to FP are consistent. In other words, model parameters were stable within 5% critical bounds.

4.7 Estimated long-run coefficients

Table (6) indicates the result of the ARDL model. The dependent variable is female labor force participation whereas, GDP, fertility rate, and female unemployment rate are the independent variables. The R squared value is 0.61,

and the adjusted R squared value is 0.42. This means that only 61 percent of total variations in female labor force participation in Sri Lanka are explained by GDP, fertility, and unemployment rate.

Table 6. ARDL (1, 1, 1, 1, 0) Model Estimated Results and Long-Term Coefficients

ARDL (1, 1, 1, 1, 0) Dependent variable = FLFP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1419.031	639.0385	2.220572	0.0387**
lnY	-879.1389	404.4665	-2.173577	0.0426**
lnY^2	56.98238	26.33573	2.163691	0.0434**
Fertility	-71.85378	47.58222	-1.510097	0.1475
Unemployment rate	-2.197325	0.799812	-2.747303	0.0128**
@TREND	-0.793810	0.550021	-1.443235	0.1652
R-squared	0.610116			
Adjusted R-squared	0.425434			
F-statistic	3.303603			
Prob(F-statistic)	0.013560			

Note: ** significance at 5 percent level
Source: Researcher's calculation using E-Views 10.

According to the result, the coefficient of lnY and lnY^2 are -879.1389 and 56.98238 respectively, and also statistically significant. If there is U shaped relationship between female labor force participation and GDP per capita $\hat{\beta}_1 < 0$ and, $\hat{\beta}_2 > 0$. According to findings $\hat{\beta}_1 < 0$ and, $\hat{\beta}_2 > 0$, there is a U-shaped relationship between female labor force participation and GDP per capita. The results of the study are consistent with Shahid (2014), Lechman & Okonowicz (2013), Olivetti (2013), Tsani *et al*. (2013), Lohati & Swaminathan (2016), and Fatima &Sultana (2009) and this study also supports the theory of U shaped relationship between female labor force participation and GDP Per capita.

The parameter estimate of fertility is -71.85378, which is showing a negative relation with female labor force participation, which the researcher accepted, but not significant. Theoretically, the relationship between fertility rate and female labor force participation should be negative. Goldin (1995) and Ozerkek (2013) also have found a negative relationship between female labor force participation and fertility rate.

The coefficient of the unemployment rate is -2.197325, which has a negative and significant effect on female labor force participation, which is according to the

hypothesis. It means that a 1 percent increase in the unemployment rate raises 2.19 percent of female labor force participation. Goldin (1995) and Ozerkek (2013) also support the negative relationship between female labor force participation and unemployment. Findings explain that the unemployment rate is an important variable to explain female labor force participation in Sri Lanka.

4.8 Estimated short-run coefficients

Table 7. Result of ECM model

| Dependent variable = Δ (FLFP) | | | | |
| ARDL(1, 1, 1, 1, 0) | | | | |
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FLFP(-1))	0.147305	0.194744	0.756405	0.4598
D(lnY)	569.1428	379.3558	1.500288	0.1519
D(lnY(-1))	-1233.341	529.6624	-2.328541	0.0325**
D(lnY^2)	-37.58970	24.20369	-1.553056	0.1388
D(lnY^2(-1))	78.56039	33.86288	2.319956	0.0330**
D(fertality)	65.89127	136.3862	0.483123	0.6352
D(unemployment)	-3.005399	0.896634	-3.351870	0.0038**
D(fertality(-1))	-39.51100	124.9169	-0.316298	0.7556
ECM(-1)	-1.322275	0.302765	-4.367326	0.0004***
C	1.301175	3.329354	0.390819	0.7008
@TREND	-0.037664	0.150148	-0.250846	0.8049
R-squared	0.720740			
Adjusted R-squared	0.556469			
F-statistic	4.387518			
Prob(F-statistic)	0.003726			

Note: ***, ** Significance at 1 percent and 5 percent level
Source: Researcher's calculation using E-Views 10.

After examining the long-run impact, the next step is to examine the short-run impact of economic development on female labor force participation in Sri Lanka. Error Correction Method (ECM) can be used to find short-run impact; results are indicated in Table 7. The coefficient of ECM_{-1} shows the speeds of adjustment from the short-run towards the long-run equilibrium path. ECT(-1) is -1.322275. It is statistically significant at both 1 and 5 percent levels of significance. This confirms our long-run relationship between economic development and female labor force participation in Sri Lanka.

According to the results, there is sufficient evidence to prove that a U-shaped relationship between economic development and female labor force participation exists in Sri Lanka. The linear and non-linear (squared) real GDP per capita is negative and positive according to expectations and statistically significant. The sign of the coefficient of the error correction term must be negative to provide stability for the model and should be smaller than 1. Narayan and Smith (2006) stated if the coefficient of the error correction term is smaller than 1, it means that the system is

equilibrating by fluctuating. This fluctuating will decrease in each term and then provide the transition to the equilibrium. In this model, the ECM coefficient is greater than 1, and it shows the speed of adjustment was outside what the model expected. The coefficient of fertility rate is -39.51100, which presents a negative relationship with female labor force participation in the short run. However, the coefficient is not significant. The unemployment rate has a similar impact on female labor force participation both in the short and long run, and the coefficient is also significant. The coefficient of ECM_{t-1} is equal to (-1.322275) and greater than 1, and statistically significant. Therefore according to Narayan and Smith (2006), the speed of adjustment was outside.

5. Conclusion

This study examines the relationship between female labor force participation and economic development in Sri Lanka over the period 1990–2019. The ARDL model was employed in this study to find the relationship between female labor force participation and economic development measured by GDP (in PPP) *per capita*. In addition to that, the fertility rate and unemployment rate are also considered in this model. The ARDL bound tests, cointegration, and Error Correction Model (ECM) were used to find long-run and short-run relationships in the model. According to the cointegration result, there is sufficient evidence to confirm the U–shaped relationship between the female labor force and economic development. If there is a U–shaped relationship, low female participation leads to low economic growth and vice versa. According to statistics, it shows a U-shaped relationship.

Further results show the long-run and short-run relationships between female labor force participation and the unemployment rate. There is a negative relationship between the unemployment rate and female labor force participation. It means the reduction of the unemployment rate cause to rise in female labor force participation.

References

Altuzarra, A., Gálvez-Gálvez, C., González-Flores, A. (2019). Economic Development and Female Labour Force Participation : The Case of European Union Countries. Sustainability, https://doi.org/10.3390/su11071962

Boserup, E. (1970). Women's Role in Economic Development; St. Martin's Press: New York, NY, USA.

CBSL. Annual Report; Central Bank of Sri Lanka: Colombo, Sri Lanka, 2020.

Chapman, K. A. (2015). Economic Development and Female Labor Force Participation in the Middle East and North Africa: A Test of the U-Shape Hypothesis. Gettysburg Economic Review, Vol.8, no.3, pp.5-22.

Chen J., Xiaokuai S., Ghulam M., and Zhongxiu Z. (2014). Factors that Influence Female Labor Force Supply in China. Economic Modelling, Vol.37, pp.485–491.

Dogan, B. and Akyüz, M. (2017). Female Labor Force Participation Rate And Economic Growth In The Framework Of Kuznets Curve: Evidence From Turkey, Review of Economic and Business Studies, Alexandru Ioan Cuza University, Faculty of Economics and Business Administration, issue 19, pages 33-54, June.

Fatima, A., Sultana, H. (2009). Tracing out the U-shape relationship between female labor force participation rate and economic development for Pakistan. International Journal of Social Economics, Vol. 36, pp.182–198 https://doi.org/10.1108/03068290910921253.

Field, A. (2005). Discovering Statistics Using SPSS. London: SAGE Publication.

Gaddis, I. and Klasen, S. (2013). Economic Development, Structural Change and Women's Labor Force Participation: A Reexamination of the Feminization U Hypothesis. *Journal of Population Economics*.

Gaddis, I., Klasen, S., (2014). Economic development, structural change, and women's labor force participation. Journal of Population Economics, 27, pp. 639–681.https://doi.org/10.1007/s00148-013-0488-2

Goldin, C. (1995).The U-shaped female labor force function in economic development in economic history. In Investment in Women's Human Capital; Schultz, T.P., Ed.; University of Chicago Press: Chicago, IL, USA.

Hare, D. (2016). What Accounts for the Decline in Labor Force Participation Among Married Women in Urban China, 1991–2011? China Economic Review, Vol. 38, pp.251–266.

Lahoti R. and H. Swaminathan (2013). Economic Development and female labour force participation in India. IIM Bangalore Research Paper, No. 414.

Lahoti, R., Swaminathan, H. (2016). Economic Development and Women's Labor Force Participation in India. Feminist Economics, 22:2, 168-195, DOI: 10.1080/13545701.2015.1066022.

Lechman, E., & Kaur, H. (2015). Economic growth and female labor force participation – verifying the U-feminization Hypothesis. New evidence for 162 countries over the period 1990-2012, Economics and Sociology, 8(1), 246–257. https://doi.org/10.14254/2071

Lechman, E., & Okonowicz, A. (2013). Are Women Important for Economic Development? *Corporate Social Responsibility and Women's Entrepreneurship around the Mare Balticum*, 310.

Lechman, E., Kaur, H. (2015). Economic growth and female labor force participation – verifying the U-feminization hypothesis. New evidence for 162 countries over

the period 1990-2012. *Economics and Sociology*, Vol. 8, No 1, pp. 246-257. DOI: 10.14254/2071- 789X.2015/8-1/19

Mammen, K. and Paxson, C. (2000). Women's Work and Economic Development. *Journal of Economic Perspectives* 14 (4), pp. 141-164

Mujahıd N. and Zafar N.U. (2012). Economic Growth-Female Labour Force Participation Nexus: An Empirical Evidence for Pakistan. The Pakistan Development Review, Vol.51, no.4, pp.565–586

Narayan P. and Smyth R. (2006). Do governments lead or lag in fighting crime? *Applied Economics Letters* 13(1): 11-15.

Olivetti, C. (2013). The female labor force and long-run development: the American experience in comparative perspective. NBER Working Paper 19131.

Ozerkek, Y. (2013). Unemployment and labor force participation: A panel cointegration analysis for European countries. Applied Econometrics and International Development, 13(1), 67–76.

Pesaran, M. H., Y. Shin, and R. Smith., (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16, pp. 289-326. Available from: https://www.researchgate.net/publication/322208483_Peasaran_et_al_2001_B ound_Test_and_ARDL_cointegration_Test.

Samarakoon, S.J.M.N. & Mayadunne, G. (2018). An exploratory study on low labour force participation of women in Sri Lanka, Sri Lanka Journal of Social Sciences, 41 (2): 137-151.

Shahid, M. (2014). Impact of Labour Force Participation on Economic Growth in Pakistan, 5(11), 89–94.

Sinha, J. N. (1965). Dynamics of female participation in economic activity in a developing economy, in World Population Conference, Belgrade, 4. Survey report.

Tam H. (2011). U-shaped Female Labor Participation with Economic Development: Some Panel Data Evidence, Economics Letters, Vol. 110, pp.140–142.

Tsani, S., Paroussos, L., Fragiadakis, C., Charalambidis, I., &Capros, P. (2013). Female labor force participation and economic growth in the South Mediterranean countries. *Economics Letters*, 120(2), 323-328.

Verick, S. (2018). Female labor force participation and development Improving outcomes for women takes more than raising labor force participation — good jobs are important too, (December), 1–11. https://doi.org/10.15185/izawol.87.v2

Verme, P. (2014). Economic Development and Female Labor Participation in the Middle East and North Africa – A Test of the U-Shape Hypothesis. *Policy Research Working Papers*. The World Bank.

Determinants of Human Capital Investment among the Government and International School Teachers in Sri Lanka (With special reference to Western Province – Kaluthara District)

A.M. Indika Gunarathna [1*]

[1] Department of Economics and Statistics, Sabaragamuwa University of Sri Lanka.

[*] *Correspondence: Indika331@yahoo.com*

Abstract

Productivity of a worker is manly determined by the Human Capital Investment (HCI) and the importance of firm-specific human capital for organizational performances was studied previously by many researchers. The purpose of this study is to conduct a comparative study of HCI between teachers in government and international schools. Two specific objectives of the study are to identify the factors affected on HCI between teachers in government and international schools and to analysis the impact of HCI on earnings of each group comparatively. Questionnaire method was used to collect primary data for this study conducted in selected government school and international school in Kalutara district. 75 government schoolteachers and 64 international schoolteachers were selected for the sample using stratified random sampling method. Binary logistic regression model was used for the analysis of the determinants while earning function was used to see the impact of HCI on earnings. The study has found that having lower years of experiences, being a rural resident, having welfare facilities from school, tendency to follow online education programmes and reimbursement of the human capital investment by the government have positive relationship with HCI in last five years while being a teacher of a government school have significant negative relationships with HCI. Considering the impact of human capital investment, that has significant positive relationship with the rate of return of the teachers in international schools while that is insignificant for the teachers in government schools. The study concluded that the teachers in international schools are more active in investing human capital and they are also remunerated attractively for their performances, based on their human capital investment as an incentive from the human resource management.

Keywords: Human Capital Investment, Teachers, Government Schools, International Schools

1. Introduction

Human capital is defined as an individual's cumulative abilities, knowledge and skills developed through formal and informal education and experience (Becker, 1975). Human capital has been playing a central role in individual and organizational

performance. Education and training are the two forms of human capital investment. Human capital has its direct benefits in the form of superior performance, productivity and career advancement of workers.

Moreover, the future requirements of the labour market are very complex than the past. Although job searching and employment is not a big issue for a person in the past, the future labour market would be more competitive. (Chang and Wang, 1996).

As an example, more qualifications should have been had to be a teacher today than past. A teacher should have been had minimum qualification as passed Advanced level examination and studied in a teacher's training school or a university is another qualification. `

According to the Economic and social statistics report of Sri Lanka in 2014 states that there are 86,762 graduate teachers (38% from total teachers) and 128,149 trained teachers (57% from total teachers) in government schools. In consideration to the past years, there were significant improvement of human capital investment among government teachers. However, there are no records on the education status of international schoolteachers in Economic and social statistics reports in past few years (2016).

HCI is not only visible in the service sector. It is an important criterion in the recruitment process of employees in production and manufacturing sector. Every institute or firm tries to get the best employees with the highest productivity and it leads to create a big competition of increasing their value by human capital investment among every person. Not only before but also after recruitment, the employees try to invest in human capital more (Chang and Wang, 1996). There are two key aspects of human capital investment of workers. They are increasing salary and get promotions. Higher studies are chosen by them to invest human capital as the solution for their new aspects. (Jones and Long, 1979) (Blundell, Dearden, Meghir and Sianesi, 1999).

In the service sector the teaching professional is one sector that is much keen in investing in Human capital. This is one of the reasons why human capital investment is high among teaching professionals. School teachers are one of the most important groups dealing with human capital development of future generation. (Hargreaves and Fullan, 2012) According to Gold (2003), organizations zealous on invest in their employees for enthusiastic employees such as staff appraisal programmes, staff welfare programmes for teachers. Investment on teachers promotes the quality of whole school system. (The Alberta Teachers' association, 2010)

2. Literature review

The human capital investment concept was not a new topic. This idea came from 1950's or 1960's. This idea increases by the attention of major two economists named Theodore Schultz and Gary Becker who studied in University of Chicago. Their researches, analysis and findings show the path for new generation and encourage other economists to do further researches. The relationship between human capital and economic growth was examined by Schultz through using the notion of human

capital. The rate of return of human capital investments of people, who increased their own skills and efficiency through education and training were calculated by Becker. Before that time period, nation's stock of human capital had been estimated by another economist named Sir William Petty in 1667 for his publication named "Political Arithmetic".

"Inquiry into the Nature and Causes of the Wealth of Nations" was published by Adam Smith in 1776. For that publication, human capital stock which helps to raise productivity of human beings had been highlighted as important part than physical capital. Smith believed the education and training as fruitful ways for increasing the productivity of human resources.

A book named "Cost Value of Human Beings" was published by Ernst Engel in 1883. He considered investing in a man as a productive factor. An article on "The Living Capital of the United Kingdom" was published by Joseph Nicholson in 1891. The cost of educating was considered as the major cost of investment method in human productivity by Nicholson. Two capitals introduced by Him as "personal" capital and "material" capital. Personal capital investment method was recognized by Nicholson as parents paying and caring for the education of their children. An article named "Capital Concept Applied to Man" published by John Raymond Walsh (Capital Concept Applied to Man, in Machlup, 2011).

According to Gardener's view of human capital, there are many measurements and types of skills. Emphasis to mental and physical abilities as different skills was introduced by this approach. (http://econ.lse.ac.uk)

The values in a person were recognized as human capital because that person cannot separate with his talents, knowledge, healthiness, wellbeing and values. Therefore the expenditure on education, training and health care are human capital investment methods (Becker, 1964).

According to the Bowles-Gintis view "human capital" is the capacitance for work in organizations. According to this view, the main role of schools is to encourage individuals for the "proper" ideological and admittance towards the life (http://econ.lse.ac.uk).

Moreover, a major character is played by human capital in endogenous economic growth. According to the Romer (1990) a major role is contributed by human capital in the research sector which produces new ideas, innovations and technologies. Usually, the countries with a higher level of qualified human capital show a rapid rate of innovations and a rapid rate of economic growth (Barro, 1991).

 According to Nelson and Phelps in Human capital and Technology Diffusion (2012), a larger stock of human capital in one country has a greater aptitude to absorb and soak up a new product or idea that discovered by another country. A follower country with higher stock of human capital tends to catch up more rapidly and grow faster with following others technologies (Barro, 2011).

The human capital investment process is based on three arguments.

    i.   The new generation must be given the suitable parts of the knowledge which has already been accumulated by before generations.

    ii.   The new generation should be known how existing knowledge should be used to expand new products, to establish new processes, production methods and social services.

    iii.   The people must be promoted to expand new ideas, products, processes and methods through creative approaches (Babalola, 2003).

Human capital theory based on the assumption that the formal education is assists on improving the production capacity of population (Schultz, 1972), (Sakamota and Powers, 1995), (Psacharopoulos and Woodhall, 1997).

There is a higher relationship between human capital investment and wage level. (Finnie and Meng, 2002) There is a diffusion of income distribution among labours, regions, countries according to the variations of the quality of human capital of employees (Nickell, 2004).

A higher human capital stock guides an economy to higher growth and lower fertility. The reason for that is higher human capital stock help to increase the ratio of physical investment to GDP (Romer, I990).

Human capital can be picking out as a mediator of a development in a country. The most important ways of improving the quality of human resources are provide education and health services (Asian economic and financial review, 2013).

Especially in education sector training programs there are personal development programs and soft skill development programs as instruments for expand skills and knowledge of employees.

Training programs help to convert employer's negative attitudes as positive attitudes. It helps employees to do their job efficiency and effectively. As a result, it develops employees' productivity very fast (http://stats.oecd.org).

"Training tools are often secured via the lowest-cost provider method with minimal consideration given to which provider would be most effective" (Sullivan, 2011).

Labor costs can reduce through a good sound scheduling and improving employee productivity. An employer can increase productivity through training. (Pavesic) Onthe job training is dealt so highly with human capital investment than other kinds of investment in human capital (Becker, 1975).

When people spent time and money on education, it can build human capital. As well as the Higher education can consider as investment in human capital. By using this process people can estimate the rate of return on their human capital investment. For

measure the rate of return of a person's education costs can recognize as direct spending on education like fees paid and the opportunity costs of student time. As well as the benefits can recognize as individual productivity. As well as there are so many gathered future benefits as superior productivity, higher wages and other nonmonetary benefits to the individual, business sector and the whole society (Backer, 1975).

As well as, the quality of education effects on further benefits to the individual and the society (Psacharopoulos and Patrinos, 2004).

According to the Levy and Murnane (1992) highly developed schooling level is associated with advanced individual earnings.

According to the Human Development Report (2010) more educated people earn higher wages and have better jobs than the less educated people. Investments in schooling have greater returns in the labor market for women (Miguel and Kremer, 2004). A successive generation is created by education (Benabou, 1994).

Production possibility, labour market productivity and lower production cost are improved by benefits of education. As well as there are many social benefits as private returns for person, longer life expectancy, less criminal behaviour, stronger social structure, better living condition and better political contribution. The educated group can do a good job and earn higher income. Therefore, they can be seen low depend on subsidies and reduces costs for tax-payers (Vila, 2000). As well as some macroeconomists have drawn attention to the productivity spill overs as an important determinant of economic growth and increasing cumulative human capital. This situation effects on aggregate productivity. They recognized the importance of individual's education on productivity (Moretti, 2005).

The higher level of education can benefit the overall society including social groups, communities and countries. There are so many positive externalities origin from education process. They are higher expected production, private returns of educated workers, lower the production cost, stronger social decisions, grater political participation, higher life expectancy, less criminal behaviour and better living condition (Vila, 2000).

The education as a foundation of human capital is affected on the contrasts in labour productivity and the contrasts in overall levels of technology (Robert, 1991). An economy can reach the internationalism by improving the quality of education (OECD, 1997).

There are three types of returns of education. They are private return, social return and labour productivity return. There are so many statistical methods for measure returns of education in the world (Blundell, Dearden&Sianesi, 2011).

3. Research Methodology

The study was conducted using data collected from western province, Kaluthara district. The population under study were the teachers of the government and

international schools in the western province Kaluthara district. According to the Economic and Social Statistics of Sri Lanka (2016), the Western province shows the highest number of teachers and Kaluthara district comprises of urban, rural and estate schools' proportions.

Stratified Random Sampling method was used to select 5% of schools from both government and international schools. Random table was used to identify schools of each district and simple random sampling method was utilized to select ¾ of teachers from each school. Accordingly, 139 school teachers were selected as the sample.

4. Econometric methodology

Binary logistic function is used to measure the factors that effect on human capital investment within five years

$$\text{In} \left(\frac{P}{1-P} \right) = \beta_o + \beta_1 D_1 + \beta_2 X_2 + \beta_3 D_3 + \beta_4 X_4 + \beta_5 D_5 + \beta_6 D_6$$

Dependent variable (Y)

Y_1 = invest in last five years (1), Y_2 = not invest in last five years (0)

Independent variables (D – dummy variables, X – continuous variables)

D_1 = Being female (1-Male, 0-Female), X_2 = age, D_3 = Being government teacher (1-government,0-International, X_4 = Family income

D_5 = having secondary job (1-having secondary job, 0- not having secondary job),

D_6 = being permanent (1- Permeant, 0 – not permanent)

5. Results

Figure 1: The Relationship between Type of School and Human Capital Investment Decision in Last Five Years
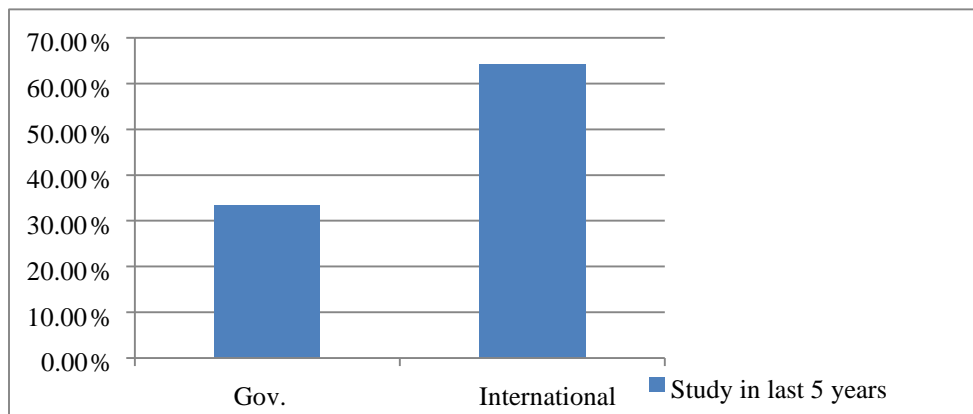
Source: Sample survey, 2018

According to the figure 1, human capital investment in last five years is higher for international school teachers than the government school teachers. The reason is the government school teachers have same pattern in human capital investment. They all try to invest in post graduate and do not engage in Human Capital investment. But international school teachers do not try to invest in post graduate rather they invest more in various English diplomas, IT diplomas and teaching diplomas.

Table 1: Personal Characteristics of the Sample

	School teachers		Government school teachers		International school teachers	
Sample characteristics	**NO**	**%**	**NO**	**%**	**NO**	**%**
Residential sector						
Rural	58	41.7	43	57.3	15	23.4
Urban	81	58.3	32	42.7	49	76.6
Family Type						
Nuclear	98	70.5	57	76	41	64.1
Extended	41	29.5	18	24	23	35.9
Life cycle stage						
Unmarried with	32	23	7	9.3	25	39.1
Parents						
Unmarried (Single)	7	5	3	4	4	6.3
Married no children	24	17.3	9	12	15	23.4
Married with children	68	48.9	51	68	17	26.6
Widowed/ divorced with children	5	3.6	2	2.7	3	4.7
Widowed/ divorced without children	3	2.2	2	4	0	
Relationship to the household head						
Household Head	32	23	18	24	14	21.9
wife/husband	75	54	50	66.7	25	39.1
son/daughter	31	22.3	7	9.3	24	37.5
other relatives	1	0.7	0	0	1	1.6
Gender						
Male	29	20.9	13	17.3	16	25
Female	110	79.1	62	82.7	48	75

Ethnic Group						
Sinhala	131	94.2	73	97.3	58	90.6
Sri Lankan Tamil	2	1.4	2	2.7	0	0
Islam	6	4.3	0	0	6	9.4
Religion						
Buddhist	106	76.3	69	92	37	57.8
Hindu	2	1.4	2	2.7	0	0
Islam	6	4.3	0	0	6	9.4
Roman Catholic or other Christian	25	18	4	5.3	21	32.8
Marital status						
Never married	37	26.6	9	12	28	43.8
Married	93	66.9	60	80	33	51.6
Widowed	6	4.3	3	4	3	4.7
Divorced	3	2.2	3	4	0	0
Household size						
1 to 2	35	25.2	19	25.3	16	25
3 to 4	78	56.1	42	56	36	56.3
5 to 6	23	16.5	12	16	11	17.2
7 to 8	3	2.2	2	2.7	1	1.6
Age						
20 – 29	24	17.3	3	4	21	32.8
30 – 39	51	36.7	24	32	27	42.2
40 – 49	38	27.3	29	38.7	9	14.1
50 -59	22	15.8	19	25.3	3	4.7
60 -69	4	2.9			4	6.3
Distance from house to school						
1km to 15km	126	90.6	67	89.3	59	92.2
16km to 30km	11	7.9	7	9.3	4	6.3
31km to 45km	1	0.7	1	1.3	0	0
46km to 50km	1	0.7			1	1.6
young children in family (below 18)						
0	81	58.3	31	41.3	50	78.1

1	31	22.3	22	29.3	9	14.1
2	23	16.5	18	24	5	7.8
3	4	2.9	4	5.3	0	0
Economic inactive family members (18-55)						
0	118	84.9	65	86.7	53	82.8
1	20	14.4	10	13.3	10	15.6
2	1	0.7	0	0	1	1.6
Elder family members (above 55)						
0	95	68.3	55	73.3	40	62.5
1	27	19.4	13	17.3	14	21.9
2	17	12.2	7	9.3	10	15.6
Total Personal Earning						
10000 - 30000	32	23	14	18.7	18	28.1
30001 - 60000	78	56.1	43	57.3	35	54.7
60001 - 100000	21	15.1	14	18.7	7	10.9
100001 - 14000	8	5.8	4	5.3	4	6.3

Source: Sample survey, 2018

The percentage of rural teachers are higher in government schools while the percentage of urban teachers are higher in international schools. There are higher percentage of teachers who live in nuclear families in the sample. The percentage of unmarried teachers are higher in international schools. However, the percentage of married teachers are higher in government schools. There is a higher percentage of female teachers in the sample. The percentage of female teachers are higher for government school teachers than international school teachers.

In consideration of the ethnicity of teachers, there is a higher percentage of Sinhala teachers in the sample. The percentage of Sinhala teachers are higher in government schools. There is a higher percentage of Buddhist teachers in the sample. In consideration of the household size of teachers, there is a higher percentage of 3 to 4 family members. Teachers who are being in 20 – 29 age level is higher for international school teachers. Teachers who are being in 40 – 49 age level is higher for government school teachers. Higher percentage of teachers live in 1km – 15km distance from house to school. The composition of family members, the percentage of having a young child (below 18) is higher for government school teachers. The percentage of having an elder family member is higher for international school teachers.
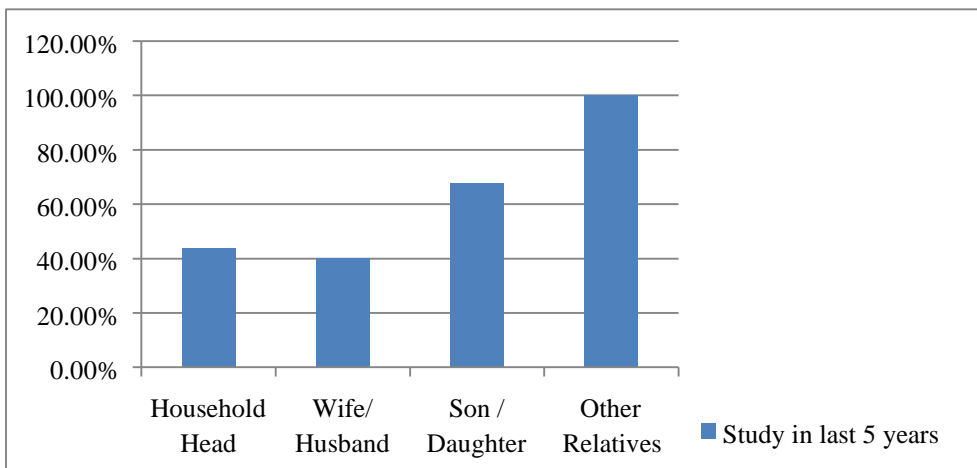
Figure 2: The relationship between residential sector and human capital investment decision in last five years
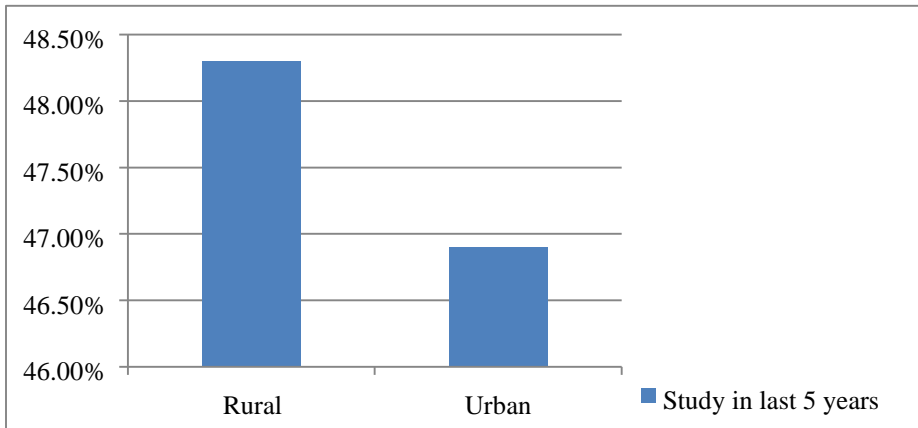
Source: Sample survey, 2018

According to the figure 2, human capital investment in last five years is higher for rural teachers than the urban teachers. The reason for that is most of rural teachers tries to get high qualifications by investing in human capital investment and try to get a transfer to schools which have more facilities.

Figure 3: The relationship between the household head and human capital investment decision in last five years

Source: Sample survey, 2018

According to the figure 3, human capital investment in last five years is higher for teachers who live in an extended family. The reason for that is, people who live in homes comprising of extended families do not have much pressure on family responsibilities.

Figure 4: The Relationship between Gender and Human Capital Investment decision in Last Five Years

Source: Sample survey, 2018

According to the figure 4, human capital investment in last five years is higher for male teachers than female teachers. The reason for that is female teachers have high family responsibilities and non-paid work than male. Roy model also found this result in 1951. According to the Roy model, men have a comparative advantage in human capital investment.
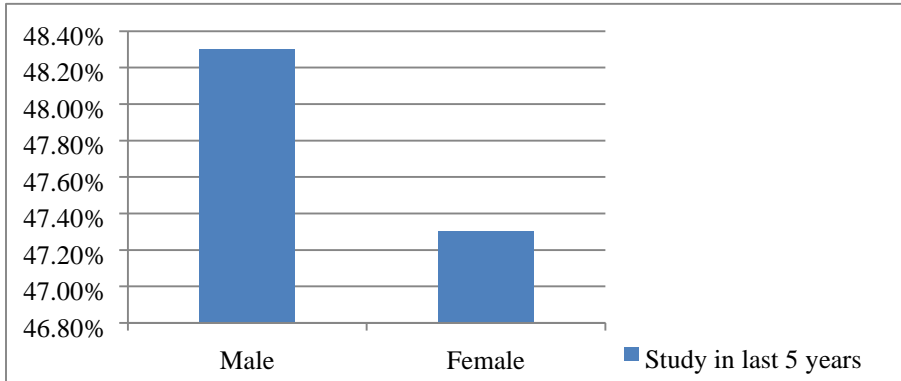
Figure 5: The Relationship between Ethnic Group and Human Capital Investment Decision in Last Five Years

Source: Sample survey, 2018

According to the figure 5, human capital investment in last five years is higher for Islam teachers than others. Most of the Islamic teachers are teachers from international schools. They have a trend in invest more in various English diplomas, IT diplomas and teaching diplomas.
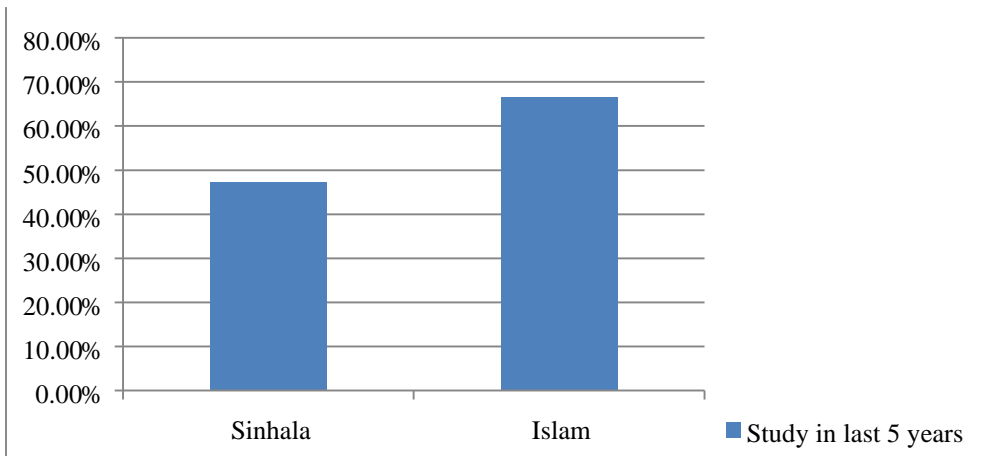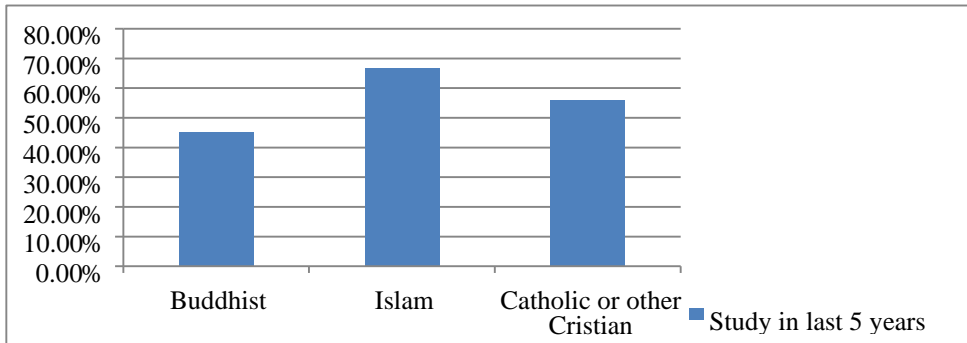
Figure 6: The Relationship between Religion and Human Capital Investment Decision in Last Five Years

Source: Sample survey, 2018

According to the figure 6, human capital investment in last five years is higher for Islam and Catholic teachers than Buddhist and Hindu teachers. The most Islamic and Catholic teachers are teaching in international schools. They have a trend in invest more in various English diplomas, IT diplomas and teaching diplomas.

Figure 7: The Relationship between Marital Status and Human Capital Investment Decision in Last Five Years
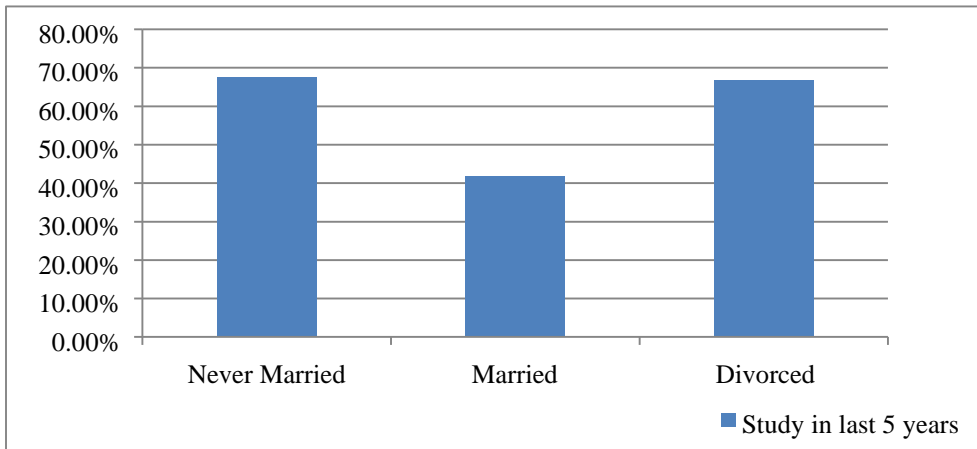
Source: Sample survey, 2018

According to the figure 7, human capital investment in last five years is higher for never married teachers and divorced teachers than married teachers. The reason for that is they have fewer family responsibilities than married teachers.

Table 2: Characteristics in the Secondary Job of the Sample

Secondary job	Total		Government school teachers		International school teachers	
	NO	%	NO	%	NO	%
Doing a Secondary job	64	46	37	49.3	27	42.2
Tution	46	71.9	27	73	19	70.4
other	18	28.1	10	27	8	29.6
Time intensive	55	85.9	35	94.6	20	74.1
Not time intensive	9	14.1	2	5.4	7	25.9
Not doing a Secondary job	75	54	38	50.7	37	57.8
Secondary job Hours						
0 to 10	36	56.3	16	43.2	20	74.1
11 to 20	14	21.9	10	27	4	14.8
21 to 30	10	15.6	9	24.3	1	3.7
31 to 40	4	6.3	2	5.4	2	7.4

Source: Sample survey, 2018

Most of teachers engage in tuition rather than other secondary job. Majority of teachers devote 0 – 10 hours for their secondary job.

Figure 8: The Relationship between the Secondary Job and Human Capital Investment Decision in Last Five Year
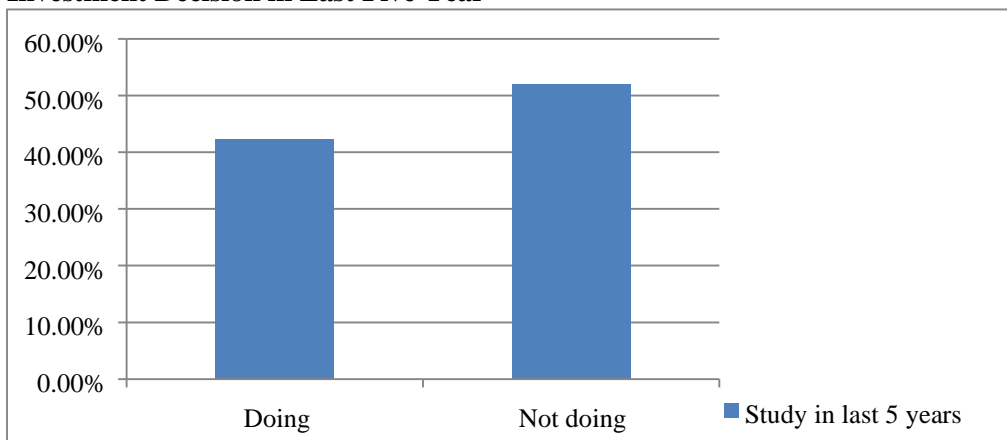
Source: Sample survey, 2018

According to figure 8 human capital investments in last five years is higher for teachers who are not engage in secondary job. When a teacher is engaged in a secondary job, his free time may be low. Low free time is a constraint for human capital investment

Moreover, a teacher study more, that is, invest in Human Capital Investment in order to increase their salary. However, they can earn higher income by engage in a secondary job. Higher secondary income encourages teachers to engage more in secondary job rather than spending time for education. If they invest in human capital, their secondary job time should devote for education. Their income is decrease at the time period of study. Therefore, their human capital investment decision is lower.

Figure 9: The Relationship between the Type of Secondary Job and Human Capital Investment Decision in Last Five Years

Source: Sample survey, 2018

According to figure 9 human capital investments in last five years is higher for teachers who engage in tuition than teachers who engage in other secondary job. If a person engages in same duty in primary job and secondary job he/she encourages investing in human capital towards his field.

Figure 10: The Relationship between Spending Time on the Secondary Job and Human Capital Investment Decision in Last Five Years

Source: Sample survey, 2018

According to figure 10 human capital investments in last five years is lower for teachers who engage in time intensive secondary job. Free time is a good incentive for human capital investment. If there is not much free time he gets discouraged to study.

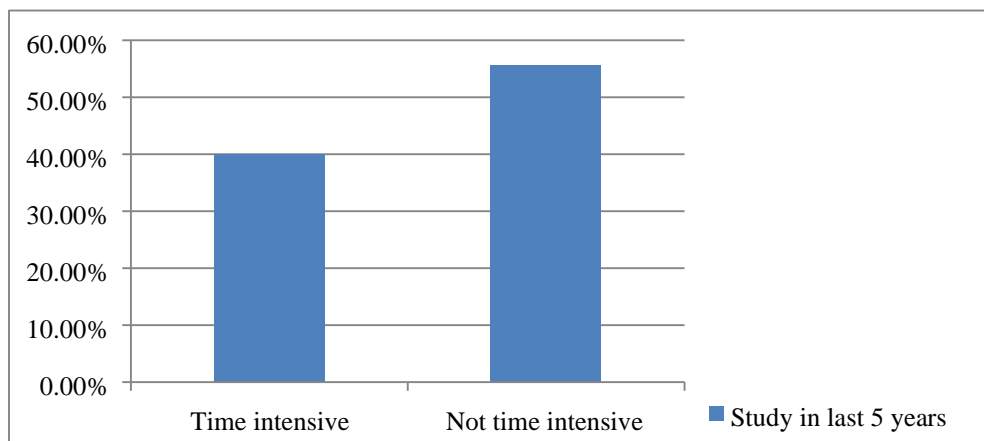**Figure 11: The Relationship between Age and Human Capital Investment Decision in Last Five Years**
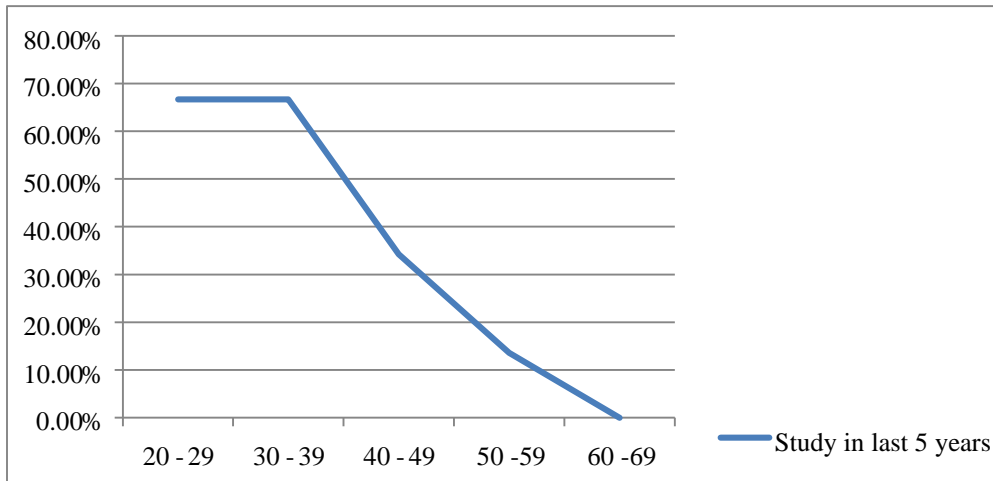
Source: Sample survey, 2018

According to the Ben-Porath model individuals make investment decisions based on maximizing the present value of lifetime earnings. Therefore, individuals decline the human capital investment with age that is, when they are getting older. Here, the teacher's human capital investment decline with the age**.**

Figure 12: The Relationship between Availability of IT Facilities for Teachers and Human Capital Investment Decision in Last Five Years
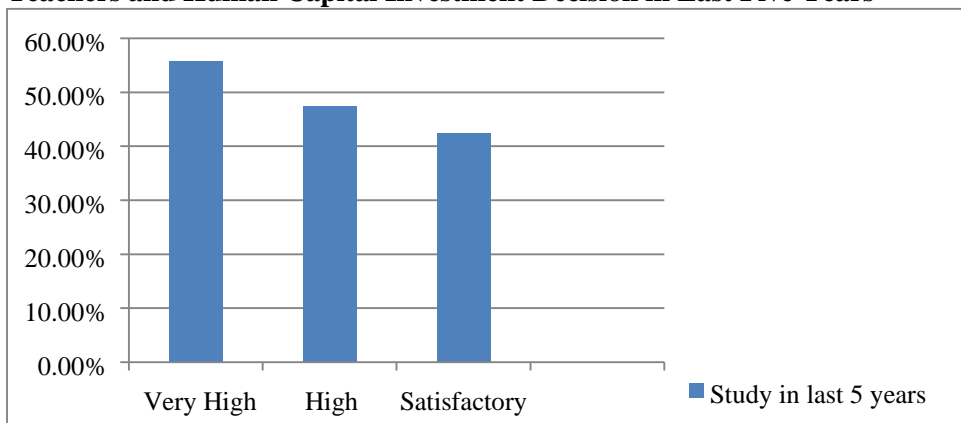
Source: Sample survey, 2018

There is a negative relationship between IT facilities and human capital investment in last five years. Usually, internet service facilitate to self-study. If there is internet facility, teachers can study course online without participating classes. Therefore, higher IT facilities encourage teachers to study.

Figure 13: The Relationship between Skill of English Language and Human Capital Investment Decision in Last Five Years
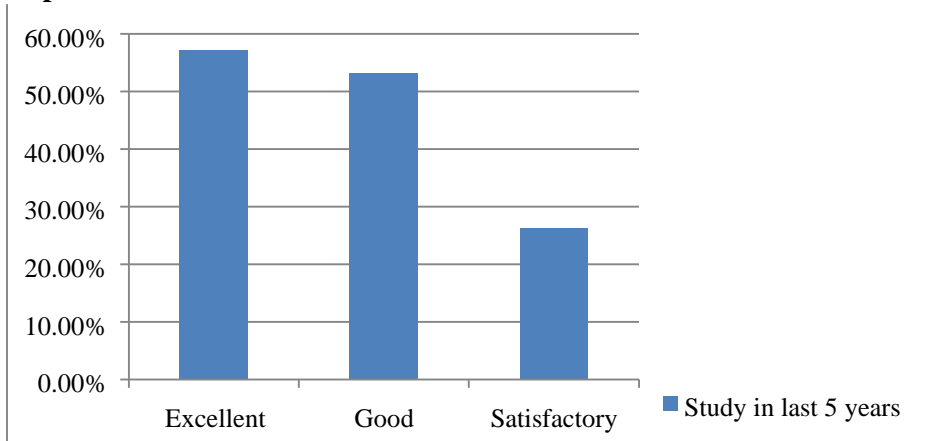
Source: Sample survey, 2018

According to 4.13 figure, human capital investment in last five years is higher for teachers with excellent English skills. There is a positive relationship between skill of English language and human capital investment decision in last five years. The most of diplomas, higher diplomas, degrees are offer from English medium. Therefore, higher English skills encourage human capital investment.

Table 3: Descriptive statistics

Variable	Total	
	n = 139	
	Mean	Std Dev.
Invested in HCI in last five years (Y)	0.44	0.50
Being Female(D1)	0.76	0.43
Age (X2)	41.45	10.23
Being government teacher(D3)	0.82	0.39
Family Income (X4)	56701.60	39799.01
Having Secondary job(D5)	0.42	0.49
Being permanent (D6)	0.93	0.26

Source: Sample survey, 2018

According to descriptive statistics (table 3) 44% of school teachers invest in human capital in last five years. Being a female has an effect to investment in 76% and there is a high tendency among the government teacher's investment in human capital

comparing the international schoolteachers. The major barrier to invest in human capital is moonlighting among the school teachers. According to the labour force survey in 2019 in national level moonlighting rate is 6.5%. In here, moonlighting rate is 42%. This is, 7 times of the national rate. Therefore, comparing the other job holders' schoolteachers have less time to invest in human capital because of high moonlighting rate.

Job security highly impact to human capital investment. In here 93% of permanent school teachers invest in human capital.

Table 4: Marginal effects of logit model

Variable	Total	
	n = 134	
	ME	Z
Being Female(D1)	0.029	0.610
Age (X2)	0.059	2.770
Being government teacher(D3)	0.153	1.530
Family Income (X4)	0.000	1.540
Having Secondary job(D5)	-0.129	-1.440
Being permanent (D6)	0.029	0.610

Source: Researcher's Sample survey, 2018

Considering the marginal effects of the model (table 3), the significant variables are being female, being government teacher, family income, having secondary job and being permanent. Considering the gender of the school teachers, when female school teachers' age increase by one year the probability of ever invest is 0.03. This states that, when the age of female teachers' increases there is a tendency to invest less in Human Capital than the male school teachers. This finding matches with the findings of Pitt, Rosenzweig and Hassan (2010). This research on Human Capital Investment and the Gender Division of Labor in a Brawn-Based Economy also stated that more tendency to invest in human capital by the female teachers can be observed.

Moonlighting has adverse effect to invest in human capital. According to the finding of the research.

6. Conclusion

Objective of the study was to find the effects of factors to human capital investment among government and international school teachers. Research findings were summarized as follows.
Human capital investment in last five years is higher for international school teachers than the government school teachers. The education programmes are unequal which chosen by government and international schoolteachers. The government school teachers have a high trend to follow postgraduate studies. But international school teachers have a high trend to follow teachers training diplomas. But both of them spend an equal time duration for study. The study has found that having lower years

of experiences, being a rural resident, having welfare facilities from school, tendency to follow online education programmes and reimbursement of the human capital investment by the government have positive relationship with HCI in last five years while being a teacher of a government school have significant negative relationships with HCI. Considering the Human capital expenses, that has significant positive relationship with expend by themselves and receiving welfare from the school while has significant negative relationship with bad English skills. Considering the impact of human capital investment, that has significant positive relationship with the rate of return of the teachers in international schools while that is insignificant for the teachers in government schools.

7. Recommendations

The government should introduce barriers of human capital investment for teachers and the facilities for education should be expanded more. Human capital investment in last five years is higher for male teachers than female teachers. Therefore, human capital investment of female teachers should be encouraged. Because of non-paid work load, female teachers discourage to study. A subsidy for caring children, build day care centres near the school, supply free education programmes during school time are some recommendations for encourage female teachers for invest in human capital. The human capital investment has a decreasing trend with the primary income. Therefore, the government should introduce new credit scheme which aims human capital investment for both government and international schoolteachers. There are no records on the education status of international school teachers in Economic and social statistics reports in past few years. Therefore, the government should prescribe international schools to publish the education status of their teachers. There is imperfect information problem among government school teachers. Some teachers have not information about the process of reimbursement of the education expenditure by the government. The government should supply perfect information for all teachers. If there are young children or economic inactive people in a family, teachers are discouraged in education. Therefore, government or school should introduce those families and give incentives.

References

Aghion, P., L. Boustan, C. Hoxby, and J. Vandenbussche, 2009. "Exploiting States' Mistakes to

Identify the Causal Impact of Higher Education on Growth." NBER conference paper,

http://www.nber.org/confer/2009/si2009/ed/hoxby.pdf. Revised version forthcoming in Brookings Papers on Economic Activity.

Akresh, Richard; Bagby, Emilie; de Walque, Damien; Kazianga, Harounan. 2010. Child Abilit and Household Human Capital Investment Decisions in Burkina Faso. Policy Research working paper; no. WPS 5370. World Bank.

Babalola J. (2003) Budget Preparation and Expenditure Control in Education. In Babalola J.B. (ed.) Basic Text in Educational Planning. Ibadan. Awemark Printers

Bai, C.E., & Wang, Y., 2003. Uncertainty in Labor Productivity and Specific Human Capital Investment

Barro, R.J., 1991. Economic growth in a Cross Section of countries, The Quaterly Journal of Economics,Vol 106, No 2 (May, 1991), 407-443.

Becker, G. S., 1975. Investment in Human Capital: Effects on Earnings Carrol, C.D., 2014. The Lucas Growth Model

Chang, C., & Wang, Y., 1996. Human Capital Investment under Asymmetric Information

Cohany, S.R., Polivka, A.E., & Rothgeb, J.M., 1994. Revisions in the current population survey

Dearden, L., Reed, H., & Reenen, J.V., The impact of training on productivity and wages

Engel, E., 1883. Cost value of Human Beings, Der Werth des Menschen, Verlag von Leonhard Simion, Berlin

Finnie, R., & Meng, R., 2002. Minorities, cognitive skills, and incomes of Canadians, Canada.

Fitzsimons, P. 1999). Human Capital theory and education. The Encyclopedia of education. London: Macmillan

Green, David A. & Craig Riddell, W., 2003. "Literacy and earnings: an investigation of the interaction of cognitive and unobserved skills in earnings generation," Labour Economics, Elsevier, vol. 10(2), pages 165-184, April.

Kulik, J. A.1994. Meta-analytic studies of findings on computer-based instruction. In

E. L. Baker & H. F. O'Neil, Jr. (Eds.), Technology assessment in education

and training *(pp. 9–33).* Lawrence Erlbaum Associates, Inc.

Kwon, Bong, D., 2009. The Human Resource Architecture: Toward a Theory of Human Capital Allocation and Development. Academy of Management Review, 24, 31-48.

Levy, F., Murnane, R.J., 1992. U.S Earnings Levels and Earnings Inequality, US

Lucas, R, 1988. On the Mechanics of Economic Development. Journal of Monetary Economics, 22(1), 3-42.

Machin, S., Marie, O., & Vujic, S., 2010. The Crime Reducing Effect of Education, IZA Discussion Paper No.5000

Machlup, Fritz, 1982. Issues in the theory of Human Capital. Education as Investment, The Pakistan Development Review, 21(1):1-14

Nanayakkara, A. G. W., 2004. Employment and unemployment Insrilanka– trends, issues and options

National Bureau of Economic Research, 1996, vol. 11

Nelson, R.R., & Phelps, E.S., 1996. Investment in Humans, Technology Diffusion and Economic growth

Nickell, S., 2004. Employment and taxes, Handbook of Labor Economics Vol 3 (Amsterdam: North Holland).

Ogunade, Adeyemi O., "Human Capital Investment in the Developing World: An Analysis of Praxis", 2011. Seminar Research Paper Series. Paper 38. http://digitalcommons.uri.edu/lrc_paper_series/38http://digitalcommons.uri.edu/lrc_paper_series/38

Olayemi, S.O., 2012. Human Capital Investment and Industrial Productivity in Nigeria

Investment, International Journal of Humanities and Social Science Vol. 2 No. 16 [Special Issue – August 2012]

Patrignani, P., & Conlon, G., 2012. Estimating the Impact of Training on Productivity using Firm – level Data

Pil, F. K., & Leana, C., 2009. The effects of teacher human and social capital on student performance

Piper, A. T., 2012. A Happiness Test of Human Capital Theory

Romer, P., 1990. Endogenous Technological Change, SAARC journal Of Educational research. 2012. Vol.

Snow, A., & Warren, R.S., 1990. University Human Capital Investment and Labor Supply under Uncertainty

Solow. R.M., 1956. A contribution to the theory of Economic growth, The Quarterly Journal of Economics, Vol. 70, No. 1 (Feb., 1956), pp. 65-94

Sorensen, P. B., 1993. Human Capital Investment, Government, and Endogenous Growth, Journal Volume 63, Issue 3, February 1997, Pages 311-329

Sullivan, P., 2011. Teaching Mathematics: Using research - informed strategies, Proceedings of the 29th annual conference of the Mathematics Education Research Group of Australasia (pp. 496–503). Sydney: MERGA.

Entrepreneurial Intention of Undergraduates in Art Stream in Sri Lanka: a case of Rajarata University of Sri Lanka

W.M.N.P.Wijesooriya [1], R.P.I.R. Prasanna [1]*

* Correspondence: prasannarjt@ssh.rjt.ac.lk

[1] Department of Economics, Faculty of Social Sciences and Humanities, Rajarata University of Sri Lanka, Sri Lanka

Abstract

In Sri Lanka, entrepreneurship is today recognized as a key development tool in addressing the growth retarding issue. In this connection, the role of university graduates, particularly in the art stream, in starting up business ventures is very critical due to existing opportunities in the globalization era. Thus, this paper aimed to identify the factors influencing the entrepreneurial intention of undergraduates in the subject discipline of arts. The study employed a structural equation model (SEM) technique using quantitative data to test the study hypotheses. Data for the analysis was drawn from a field survey conducted among 140 final-year undergraduates in the art stream at the Rajarata University of Sri Lanka. The results of the SEM confirmed the positive effects of the variable – attitudes and perceived behavior control – on undergraduate intention to start a business upon graduation. The descriptive analysis of construct variables of the model revealed that the majority of the undergraduates are with positive attitudes and are full of confidence in their talents in starting business ventures. The study recommends designing new course units assessing the needs of creating entrepreneurs, to organize and continue entrepreneur training programs in universities for the undergraduates during their academic period through experienced and well-known entrepreneurs in Sri Lanka.

Keywords: Business, Entrepreneurial intention, Graduates, Sri Lanka

1. Introduction

Entrepreneurship is considered an important element of social and economic growth of both developed and developing countries (Krueger, 1993). It brings innovation for business processes, cultivates small and medium enterprises culture, improves economic structures, and creates jobs in any economy (Gurel, 2010; Kwaramba, 2012; Li, 2008; Nabi and Holden, 2008). Entrepreneurial intention is a major indicator of entrepreneurship (Drost, 2015), and it may arise due to the personal interest and environmental factors that control a person's behavior (Aliyu, 2013). The intention is a person's willingness to perform a given behavior (Ajzen, 1991). Intentions were the single best predictors of individual behaviors particularly when the behavior is rare, hard to observe, or involves unpredictable time lags (Krueger & Brazeal, 1994). It plays a significant role in driving the behavioral actions for starting a business (Cars et al, 2011). According to the Theory of Planned Behavior (TPB),

the formation of entrepreneurial intentions is a time-consuming process (Kautonen et al., 2015).

Countries like China, Japan, Singapore, and Malaysia have taken entrepreneurship as a development tool (Plant & Ren, 2010; Nishantha, 2008). These countries have recognized the need for entrepreneurial activities in facing the competitive challenges of the economies in the era of economic globalization. According to the report of Global Entrepreneurship Monitor in 2006, one-third of changes in economic growth between nations are due to changes in entrepreneurial activities (Bosma, 2013).

According to the studies in the field of the entrepreneurial intention of university students, countries in the European region provide mixed evidence. Particularly, university students in the developed nation are less likely to start a business due to well-established welfare systems, developed labor markets, presence of large global players and thereby the existence of employment opportunities, etc… (Reynolds et al., 2002). In contrast to developed nations, the university students in developing nations are more likely to undertake entrepreneurial activities, but with many limitations such as poor accessibility in financial markets, lack of technological adaptation, lack of knowledge in the entrepreneurial field, lack of institutional readiness to support, etc… (Achchuthan, 2012).

As a developing nation, Sri Lanka has identified entrepreneurship as a tool for sustainable economic development. It is evident from the recent government vision on Enterprise Sri Lanka. However, Sri Lanka has not yet gained the real benefits of entrepreneurship on economic development. As a result, Sri Lanka is today facing the problem of unemployment issue with a lower economic growth rate. After introducing the open economic policy in 1977, Sri Lanka is still not being able to move to the next structural circle which needs more entrepreneurial activities to shift the production possibility frontier upward (Prasanna & Ekanayake, 2019). To reach the next structural circle of the economy, it is essential to create entrepreneurial intention with innovation and information technology. According to the economic vision of Sri Lanka, the economy is scheduled to transform from middle – income upper country to a high-income country by 2040. In this vision, entrepreneurship is identified as a key element especially in achieving economic growth targets while addressing the unemployment issue in the economy. Therefore, Sri Lanka should identify factors influencing the entrepreneurial intention of people and understand its possibilities for rebuilding the education system to create an entrepreneurial culture in the nation and change the production pattern, and creation of self-employment opportunities to reduce unemployment in Sri Lanka (Nishantha, 2008; Dinis et. al., 2013). The especially entrepreneurial intention of the younger generation of the country is more critical to achieving sustainable, vibrant, and more resilient growth in the economy in the long run (Ummah 2009).

Given this backdrop, it is reported a low rate of graduates who start a business upon graduation in developing countries. By taking into account this growth retarding issue in the economy, many countries have attempted to address the issue through curricula in university education and thereby motivate graduates to start a new business upon graduation. The best lessons are provided by the developed nations' movement

towards the establishment of Entrepreneurial Universities (National Entrepreneurship Week Sri Lanka, 2008).

In Sri Lanka, the rate of unemployment among university graduates is high than the rate for low educated youth. Providing employment opportunities in the public sector for all graduates is a critical issue for the government of Sri Lanka (Ummah, 2009). For instance, in 2019, a 2.9% level of unemployment rate was reported among low educated youth (Below GCE O/L) and the educated youth (AL/above) unemployment rate was 7.9% in 2019 (Department of Census and Statistics, 2019). Nearly, 30,000 university graduates passed out from the university annually. Forty % of all graduates represent art graduates who accounted for 52% and 31.2% of public and private sector employment, respectively in 2018 (National Audit Report, 2020). Many art graduates who dislike engaging in self–employment do not have basic knowledge of management. Especially, art graduates wait as unemployed for a long time due to their high intention in securing a job in the government sector. In Sri Lanka 2018, 14.5% of the rate of employment was reported among the public sector. However, the rate of private-sector employment was 43.3%. It indicates the private sector could be recognized as a main employment provider in the economy. The percentage of self-employed persons reported 32.3% in 2018. In addition, the educated youth of employment was 20% (A/l or above) whether the contribution of uneducated youth for employment was 47% (Grade 6-10) in 2018 (Department of Census and Statistics, 2018). This implies that educated youth are less involved in the economy of Sri Lanka. One reason is that mostly the graduates are not interesting to work in the private sector or be self-employed.

2. Problem statement and objective of the study

Many art graduates wait as unemployed for a long time due to their high intention of securing a job in the government sector. At present, the country maintains a large public sector maintaining 1 public servant for 14 people. Further, an increase in the public sector employment will decrease its productivity and efficiency due to a higher number (1.4 million) in the public sector employment. Recurrent expenditure on public sector salaries and pension has today reached approximately 45% (approximately LKR 900 billion) of government revenue. It is no doubt that this has largely contributed to widening the country's budget deficit. Also, declining the entrepreneurial intention of people in the economy adversely affects the job creation process in the economy. It limits the possibility to create new inventions and innovations in the economy. Sri Lanka has a challenge in producing graduates who can create jobs in the economy rather than seek jobs. Therefore, Sri Lanka should identify factors influencing the entrepreneurial intention of graduates to face the emerging economic challenges. Finally, this study is focused to answer the question of *"What factors affecting the entrepreneurial intention of undergraduates in the art stream in Sri Lanka?"*
Given this backdrop, the main objective of this study is to determine factors affecting the entrepreneurial intention of undergraduates in the art stream in Sri Lanka. The specific objectives of the study are to determine the level of the entrepreneurial intention of undergraduates in the art stream upon their graduation and to determine

the influence of attitudes, subject norms, and perceived behavior control on the entrepreneurial intention of undergraduates in the art stream.

3. Study hypothesis

By reviewing the existing literature in the field, the study identified three variables that affect the entrepreneurial intention of undergraduates in the art stream. They are attitudes, subjective norms, and perceived behavior control.

Attitudes are generally defined as a person's ideas and beliefs that influence the behavior of the person to the desired outcome. According to Douglas & Fitzsimmons (2005), successful entrepreneurs are with high attitudes toward financial rewards, a sense of accomplishment, independence, competitiveness, and attitudes toward change. Specifically, these behavioral attitudes include costs and benefits, behavioral beliefs, or expectations of return (Ajsen & Fishbine, 2005). Subjective norms are defined as people's opinions about the beliefs, values, and norms believed by the individuals who are important to them or those individuals they respect, and that people are willing to conform to those norms (Kerger et al, 2000). Perceived behavioral controls (PBC) are features that facilitate or interfere with the functioning of a behavior.

The following three hypotheses were established by the study.
H1: No impact of attitudes on the entrepreneurial intention of undergraduates in the art stream.
H2: No impact of subjective norms on the entrepreneurial intention of undergraduates in the art stream.
H3: No impact of perceived behavior control on the entrepreneurial intention of undergraduates in the art stream.

4. Research methodology

The main intention of the study is to determine the factors affecting the entrepreneurial intention of undergraduates in the art stream in Sri Lanka. In this connection, primary data for the analysis was drawn from a field survey conducted among final year undergraduates in the Faculty of Social Sciences and Humanities, the Rajarata University of Sri Lanka during the year 2020. The study employed pre-tested a self-administered structured question to the collection of data. The questionnaire was designed to elicit data for three variables – attitudes, subjective norms, and perceived behavior control. The study used the standard questions developed by Linan, (2008) and Benachenhou and Boucif (2016,2017) (see Table 1). The variables were measured on a five-point Likert Scale. One-hundred and forty out of 346 students in the final year BA and BA (Hons) Degree programs in 2020 were selected for the study using a stratified random sampling technique.
The study used Structural Equation Model (SEM) in determining the factors affecting the entrepreneurial intention of undergraduates upon graduation. The study conducted the analysis using the AMOS 21 software.

Table 1: Operationalization of independent variables and dependent variable

Variable	Indictors	Measurement Scale	Question No.
Attitudes	A career as an entrepreneur is quite appealing to me	Seven Point Likert Scale	Q8
	If I had the opportunity and resources, I would start a business		Q9
	Among various options, I prefer to be an entrepreneur		Q10
	Being an entrepreneur would give me great satisfaction		Q11
	Source: Linan, (2008); Benachenhou and Boucif (2016,2017)		
Subjective Norms	I believe that people think I should pursue a career as an entrepreneur	Seven Point Likert Scale	Q12
	My friends would accept my decision to start a new firm		Q13
	My immediate family would approve of my decision to start a new firm		Q14
	My colleges would appreciate my decision to start a business		Q15
	Source: Linan, (2008); Benachenhou and Boucif (2016,2017)		
Perceived Behavior hhmmmm	In general, I know everything about the practical details required to start a business	Seven Point Likert Scale	Q16
	I think I would be completely able to start a new business		Q17
	I can control the process of creating a new business		Q18

	If I tried to start a new business, I would have a great chance of success		Q19
	Generally, it will be easy for me to develop a business idea		Q20
	Starting a firm and maintaining it viable would be easy for me		Q21
	Source: Linan, (2008); Benachenhou and Boucif (2016,2017)		
Entrepreneur Intention	I am determined to create a business venture in the future	Seven Point Likert Scale	Q22
	My professional goal is to become a future entrepreneur		Q23
	My I am willing to do anything to be an entrepreneur		Q24
	I have no serious doubts about starting my own business		Q25
	I will make every effort to start and run my own business		Q26
	I have a very high intention of ever starting a business		Q27
	Source: Linan, (2008); Benachenhou and Boucif (2016,2017)		

5. Results and Discussion

5.1 Characteristics of the surveyed sample

The descriptive profile of the surveyed sample revealed a higher percentage of female representation (85%) in the sample compared to the male category. This is consistent with the student population of the undergraduates in the degree programs of art stream in the university system and thus, the gender-based contextual difference is in the sample. Thus, the results of the study would bias to female perception on the entrepreneurial intention. According to Calas and Smirchich et al. (1989), the social feminist theory (SF theory) theorizes that women are inherently different from men. The age group of 23-26 represents approximately 92% of the sample. The sample statistics further revealed that 92% of surveyed undergraduates are unmarried. The degree program-wise analysis revealed that of the total sample, 54% of undergraduates were in the Bachelor of Arts (General) degree program and the rest were in the Bachelor of Arts (Hons) degree program. The level of carrier experience of the sampled undergraduates revealed that 44% of undergraduates were with no carrier experience. Eighty-one % of students have reported that they are willing to start business ventures upon graduation.

5.2 Analysis of the degree of the entrepreneurial intention of the undergraduates

Entrepreneurial Intention: 37.9% of the undergraduates agree with question Q22 – "I am determined to create a business venture in the future" while 24.3% moderate to the same question. Q23 - "My professional goal is to become a future entrepreneur" obtained 37.1% moderate and 27.1% agreed. Forty-one % of the students moderate to the question Q24- "I am willing to do anything to be an entrepreneur" while 18.6% agree to the same. In terms of Q25 - "I have no serious doubts about starting my own business", 37.1% moderate and 28.6% agree. Further, 46.4% and 31.4% of the sample reported the answer moderate and agreed to the question Q26- "I have no serious doubts about starting my own business" respectively. Thirty-nine % of surveyed undergraduates agree to the question Q27- "I will make every effort to start and run my own business" while another 29.3% moderate with the same question. Finally, about 37.1 percent agree to the question Q28- "I have a very high intention of ever starting a business". These results indicate that majority of surveyed undergraduates are with entrepreneurial intentions. The possible reason for the majority of undergraduates to become entrepreneurs upon graduation would be the influence of carrier awareness programs generally offered by the Faculty and the University at a large and existing debate in the society over the heavy burden of the large public sector over public expenditure of the government. Specifically, the carrier awareness programs designed for the undergraduates in the faculty explain the existing opportunities in the market for starting business ventures on a part-time or full-time basis.

Attitudes: The study used 4 questions (Q8, Q9, Q10, and Q11) to measure the variable- attitudes. In terms of Q8- "A career as an entrepreneur is quite appealing to me", 37.1% and 28.6% of undergraduates reported moderate and agree answers, respectively, indicating the positive attitudes of nearly 65% of undergraduates

towards carrier as an entrepreneur. Responding to Q9- "If I had the opportunity and resources, I would start a business", approximately, 61% of undergraduates revealed positive attitudes concerning starting up the business if opportunity and resources are available. Analysis of Q10 - "Among various options, I prefer to be an entrepreneur", revealed nearly 65% of undergraduate's attitudes to be an entrepreneur. This indicates the existing opportunities to promote or encourage the undergraduates to cultivate a graduate-led entrepreneurial culture in the economy. Responses to Q11 –"being an entrepreneur would give me great satisfaction", also revealed majorities (66%) positive attitudes towards being an entrepreneur upon graduation. Overall, it is revealed through the question which used to assess the attitudes of undergraduates concerning be an entrepreneur that the majority is with enthusiastic attitudes to start their own business considering existing opportunities and resources. These findings contradict with the findings of the study carried out by Achchuthan & Nimalathasan (2012). Thus, it could be viewed as impacts of entrepreneurial oriented subjects and programs offered by the Faculty. Specifically, it was revealed in the analysis that majority of the surveyed students had participated in the programs which aimed to promote or motivate students to business field or self-employment.

Subjective norms: In measuring the subjective norm, the study used 4 questions – Q12, Q13, Q14, and Q15- and these questions aimed to assess the undergraduates' opinions concerning beliefs, values, and norms believed by the individuals who are important to them in case of pursuing carrier as an entrepreneur. The undergraduates' responses revealed high percentages (Q12-77%; Q13-93%; Q14-94%; and Q15 – 93%) of undergraduates with positive opinions in case of individual's beliefs, values, and norms concerning their decision to pursue a carrier as an entrepreneur.

Perceived behavior control: Under this variable, it is measured the features that facilitate or interfere with the functioning of behavior. In this connection, the study employed 6 questions (Q16, Q17, Q18, Q19, Q20, and Q21). The Q16 with nearly 50% responses in a disagree position indicates that half of the undergraduates do not have the practical details required to start a business. In case of the rest of the sub-variables used to measure the perceived behavior control revealed higher percentages of undergraduates with optimistic views in starting a business, creating business, succeeding business, developing a business idea, and maintaining the business.

5.3 Results of structural equation model (SEM)
The study first conducted a factor analysis to determine the reliability and validity of the constructs used in the model. Table 2 presents the results of Cronbach's alpha and weights of the relevant factors and constructs. The value of Cronbach's alpha ranges between 0 and 1, threshold point is 0.6 (Godard, Ehlinger, & Grenier, 2001). Accordingly, the results of the reliability test confirmed that all the questions are reliable and collected data can be used for further analysis.

Table 2: Cronbach's alpha and weights of the relevant factors and constructs

Code Assigned	Factors and constructs	Cronbach's alpha	Factor Loading
	Entrepreneurial Intention	0.905	
I1	I am determined to create a business venture in the future		0.169
I2	My professional goal is to become a future entrepreneur		0.235
I3	I am willing to do anything to be an entrepreneur		0.075
I4	I have no serious doubts about starting my own business		0.052
I5	I will make every effort to start and run my own business		0.271
I6	I have a very high intention of ever starting a business		0.134
	Attitudes	0.885	
A1	A career as an entrepreneur is quite appealing to me		0.106
A2	If I had the opportunity and resources, I would start a business		0.258
A3	Among various options, I prefer to be an entrepreneur		0.168
A4	Being an entrepreneur would give me great satisfaction		0.199
	Subjective Norms	0.650	
SN1	I believe that people think I should pursue a career as an entrepreneur		0.031
SN2	My friends would accept my decision to start a new firm		0.148
SN3	My immediate family would approve of my decision to start a new firm		0.104
SN4	My colleges would appreciate my decision to start a business		0.072
	Perceived Behavior Control	0.751	
PBC1	In general, I know everything about the practical details required to start a business		0.037
PBC2	I think I would be completely able to start a new business		0.122
PBC3	I can control the process of creating a new business		0.154
PBC4	If I tried to start a new business, I would have a great chance of success		0.063
PBC5	Generally, it will be easy for me to develop a business idea		0.115
PBC6	Starting a firm and maintaining it viable would be easy for me		0.155

Source: Authors' derivations using the field survey data

Table 3 presents the results of the model fit indices in the SEM. It shows that *the p-*value of the Chi-square is 0.000 which is less than the significance level of $\alpha = 0.01$ indicating the overall significance of the model. The results further show that the Chi-square value (352.07) is not very high compared to degrees of freedom (164). As values of Normal Fit Index (NFI), Tucker Lewis Index (TLI), Comparative Fit Index (CFI) are close to 1 the model is the better fit. Root Mean Square Error Approximation (RMSEA) value is also less than 0.5. Thus, the results of these indices justified a good model fit.

Table 3: The results of the model fit indices in the structural equation model

P-value	Chi-square	Chi-square (p)	NFI	RMSE	CFI	TLI
	352.070	0.000	0.806	0.091	0.884	0.866

Source: Authors' derivations using the field survey data

The survey data was used to estimates the partial least squares (PLS). The SEM model consists of two sub-models – the measurement model and the structural model. The structural model builds the relationship among the latent variables. Figure 2 presents the results of SEM with standardized coefficients. The results revealed that attitudes, subjective norms, perceived behavior control have a positive impact on entrepreneurial intention, but the variable- subjective norms- is not statistically significant as *the p-*value is greater than 0.05 level of significance (see Table 4). These three latent variables explained 56% of the variance in the dependent variable - entrepreneurial intention- with loading between 0.14 (SN) and 0.49 (PBC). Further, the impact of attitudes (0.59) was greater than the effect of perceived behavioral control. Attitudes (A) have a positive effect on student entrepreneurial intention with a regression weight of 0.59. This means a 1 unit increase in attitudes would increase students' entrepreneurial intention by 0.59 and the variable is significant at 1% level of the significance. The regression weight of perceived behavior control (PBC) is 0.49. This means that a 1 unit increase in perceived behavior control would increase student entrepreneurial intention by 0.49. The regression weight of the variable is also significant at a 5% level of significance.

According to the results of the SEM, H1 and H3 null-hypotheses are rejected indicating the effect of attitudes and perceived behavior control on entrepreneurial intention of undergraduates in the subject discipline of art stream. Further, the H2 null hypothesis is accepted indicating no impact of subjective norms on the entrepreneurial intention of the sampled undergraduates.

Table 4: Regression Weights

	Estimate	S. E	C.R.	P
1< --- A	.594	.136	4.356	.000
1< --- SN	.143	.304	.469	.639
1< --- PBC	.495	.219	2.256	.024

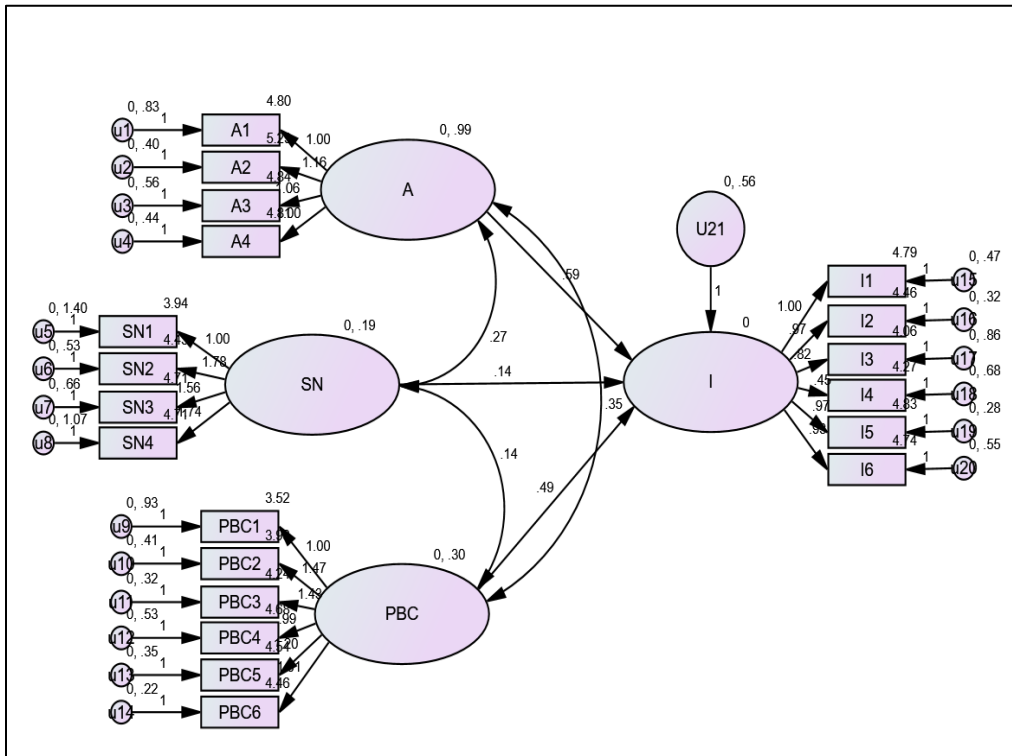**Source**: Authors' derivations using the field survey data

Figure 2: Results of the structural equation model with standardized coefficients
Note: A, Attitudes; SN, subjective norms; PBC, perceived behavior control; I, entrepreneurial intention

6. Concluding remarks

The study aimed to determine the factors influencing the entrepreneurial intention of the undergraduates in the subject discipline of arts in Sri Lanka using a quantitative approach. The results of SEM confirmed the positive effect of the variables – attitude and perceived behavior control – on entrepreneurial intention and the variable – subjective norms- does not affect the entrepreneurial intention of the graduates in the art stream. The descriptive analysis of construct variables of the model revealed that the majority of the undergraduates are intending to start the business upon graduation. They are with positive attitudes and full of confidence in their talents. It could be recognized as a result of specific motivational programs including the carrier awareness programs and subject-specific orientations related to entrepreneurship. However, the literature in the field revealed numerous obstacles in making the business plan reality such as poor financial market accessibility, difficulty in accessing and adopting modern technology, lack of awareness in the entrepreneurial field, poor institutional readiness to support graduates who wish to a start-up business. The study findings further confirmed the existing opportunity to established art graduates-led entrepreneurial culture in the economy as they are with positive attitudes and full of confidence in their talents. Thus, the study recommends designing

new course units assessing the needs of creating entrepreneurs, to organize and continue entrepreneur training programs in universities for the undergraduates during their academic period through experienced and well-known entrepreneurs in Sri Lanka. Such experience during the academic period will motivate art graduates to start entrepreneurial carrier upon graduation and thereby address the growth retarding issue in the economy.

References

Achchuthan, S. & Nimalathasan, B., 2012. Entrepreneurial motivation and self employment intention:A case study on management undergraduates of university of Jaffna. *International conference on business and information,* Volume 1.

Ajzen, I., 1991. The theory of planned behavior. *Oraganizational behaviour and human decision processes,* 50(2), pp. 179-211.

Barbosa, E. G. & Moraes, C. D. C., 2009. Determinats of the firm's capital structure: The case of the very small enterprises.

Baughn, C. et al., 2006. Normative, social and congnitive predictors of entrepreneurial interest in China, Vietnam and Philiphines. *Journal of Development Entrepreneurship,* 11(01), pp. 57-77.

Birdthistle, N., 2008. An examination of tertiary student's desire to found an entreprises. *Education and training,* 50(7), pp. 552-567.

Bosma, N., 2013. The global entrepreneurship monitor and its impact on entrepreneurship research. *Foundation and trends in entrepreneurship,* 9(2).

Central Bank, 2017. *Annual report,* CBSL.

Davery, T., Corolin, P. & Miemie, S., 2011. Entrepreneurship perceptions and career intentions of international students. 53(5), pp. 335-352.

Eyal, T. et al., 2009. Expressing values in behavioral intentions for the near vs distant future. *J Exp Soc Psychol,* 45(1), pp. 35-43.

Fatoki, O. O., 2010. Graduate Entrepreneurial intention is South Africa: Motivations and obstacles. *International journal of business and management,* 5(9).

Gurel, E., Altinay, L. & Daniele, R., 2010. Tourism student's entrepreneurial intentions. *Annals of tourism research,* 37(3), pp. 646-669.

Hart, M. & Harrison, R., 1992. Encouraging enterprise in Northen Ireland: Constraints and opportunities. *Irish business and administrative reseach,* Volume 13, pp. 104-116.

Henderson, R. & Robertson, M., 1999. Who wants to be an entrepreneur? Young adult attitudes to entrepreneurship as a carrer. *Education and training,* 41(5), pp. 236-245.

Jawara, N. & Hoque, M., 2018. Entrepreneurial intentions among university students: A case study of Durban university of technology. *Academy of entrepreneurship,* 24(3), pp. 1-19.

Krueger, F. N., 1993. The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability. *Entrepreneurship theory and practice,* 18(1), pp. 5-21.

Lakorleva, T., Kolvered, L. & Stephan, U., 2011. Entrepreneurial intentions in developing and developed countries. *Education and training,* 53(5), pp. 353-370.

Li, 2008. Research on factors affecting students entrepreneurial intentions based on theory of planned behavior. *China soft science,* Volume 23, pp. 122-128.

Mcstay, D., 2008. An investigation of undergraduate student self-employment intention and the impact of entrepreneurship education and perious entrepreneurial experience. *Bond business school.*

Mei, H. et al., 2016. Planned behaviour of tourism students entrepreneurial intentions in China. *Applied Economics,* 48(13), pp. 1240-1254.

Nabi, G. & Holden, R., 2008. Graduate entrepreneurship intentions education and training. *Education and training,* 50(7), pp. 545-551.

Nabi, G. & Linan, F., 2011. Graduate entrepreneurship in the developing world: intentions, education and development. *Education and training,* 53(5), pp. 325-334.

National audit office, 2020. *Audit Report,* Sri Lanka.

Nazar, A. et al., 2019. Short - term and Loan- term entrepreneurial intention comparison between Pakistan and Vietnam. *Sustainability,* 11(23).

Nishantha, B., 2009. Influence of personality traits and socio-demographic background of undergraduate students on motivation for entrepreneurial career: The case of Sri Lanka. *Economic career,* 49(2), pp. 71-82.

Olufunso, O., 2010. Graduate entrepreneurial intention in South Affrica: Motivations and Obstacles. *International journal of business and management,* 5(9), pp. 87-98.

Perera, S., 2016. Factors affecting entrepreneurial intention among undergraduates: A case of university of Sri Jayawardhanapura,Sri Lanka.

Plant, R., 2010. A comparative study of motivation and entrepreneurial intentionality: Chinese and American perspectives. *Development entrepreneurship,* 15(2), pp. 187-204.

Singam, K., 2017. Review on graduate's unemployment in Sri Lanka and the globe. *Global journal of human-social science,* 17(8).

Ummah, S., 2009. Entrepreneurial motivation and self employment intention: An empirical study an management undergraduates in Sri Lanka. *Journal of management,* 5(1), pp. 87-96.

Wang, Y., Chen, Y. & Benitez-Amado, J., 2015. How information technology influences environmental performance: Empirical evidence from China. *International journal of information management,* 35(2), pp. 160-170.

Factors affecting youth Participation in Agriculture in Galenbidunuwewa divisional secretariat division, Anuradhapura, Sri Lanka

P.W.G.S.L Jayasinghe [1], S.A.U. Niranjala[1]*

* Correspondence: niranjala@ssh.rjt.ac.lk

[1] Department of Economics, Faculty of Social Sciences and Humanities, Rajarata University of Sri Lanka

Abstract

This research aims to examine factors affecting youth participation such as gender, education level, marital status, family income, household size, land size, water availability, credit availability, and experiences. The Source of data used in this study is primary data based on the Galenbidunuwewa divisional secretariat division in Anuradhapura district, Sri Lanka. A total of 75 youth were purposively selected for the study to complete a survey. The binary logistic model was used to analyze the determinants of youth participation in agriculture. The results showed that water availability and experience significantly influenced the factors that affect youth participation in agricultural activities. The result of the binary regression coefficient indicates that the variable gender and marital status have a negative impact on participating youths in agriculture. In contrast, the variable education level, family income, household size, and credit availability do not affect youth participation.

Keywords: binary logistic model, participation, youth.

1. Background of the study

Agriculture has played a main source of employment since independence in Sri Lanka. Currently, 23.73 % of the total population has been employed in agriculture and agriculture-related activities for their livelihoods, contributing 8.36 percent to GDP by 2020 (Central Bank Report, 2020). Attracting youth and retaining them in the agriculture sector remains a global challenge (Mukembo et al., 2014). The United Nations defines youth as individuals in the age group ranging from 15 to 24 years (Filmer,2014). Rural youth are young people that reside in rural areas embedded in the socio-cultural context (Assaad & Roudi-Fahimi, 2007; Leavy &Smith, 2010). They are heterogeneous in gender, age, personality, religion, ethnicity, education, family position, and social networks (Bennell,2007; Sumberg et al.,2014).

According to Umesh et al. (2011) contribution of agriculture to farmers' income and rural development depends on the active participation of youth who are the potential labor force because of their innovative behavior, minimal risk aversion, less fear of failure, greater physical strength, and greater knowledge acquisition propensity. The youth unemployment rate is higher than that of adults in most countries (Keese et al., 2013). Agriculture holds considerable potential to provide gainful employment opportunities to youths if it is supported with increased investment and conducive legal and policy Frameworks (Koira,2014; Proctor& Lucchesi, 2012; Girard, 2016).

There is a need to support youth in identifying business opportunities in the agriculture sector, from producing food to providing storage, transport, processing, and marketing (Koira, 2014). Youth migration from rural to urban has become a common problem in the world. Most youths migrate to urban areas for better employment opportunities and income, and rural regions are affected by poverty and hunger. Moreover, rural people migrate to urban areas to solve poverty, hunger, and unemployment (Samardick et al., 2000; Woolard, 2013).

The youth's severe issues are lack of job opportunities, lack of education opportunities, deteriorating moral values, drugs, alcohol consumption, poverty, smoking, violence, and lack of mobility (Ibarguen, 2005). In 2020, the population aged 15-24 years for Sri Lanka was 3,160.21 thousand persons. Further, the unemployment rates for males and females are 21.1 and 36.3 percent, respectively, for the age group 15—24 (Labor Force Statistics, 2020). There has been a growing political commitment across Sri Lanka to engage youth in agribusiness. It is challenging to attract youth into agriculture as an occupation. Thus, this study aimed to identify factors that influence effective youth participation in agriculture as an occupation in Sri Lanka by considering the farmers in the Galenbindunuwewa DS area.

There is a widespread belief that youths play a vital role in agricultural and rural development (Ommani, 2006). Bountiful factors are contributing to youth's participation in farming. Twumasi et al. (2019) examined determinants of youths' participation in agricultural production in Ghana. The empirical result revealed that Youth perception of farm input price, youth level of education, access to credit, access land and youth course of study at the tertiary institution, gender composition of the youth, and youth perception of farm income significantly affect engagement in farming. Janeth et al., (2019) research on socio-economic factors influencing participation in agriculture showed that age, education level of the respondent, cost of technology, and land acreage were significant in participation in the youth in agriculture. In addition, household size, farm size, years of farming experience, attitude have been identified as significant factors of involvement in agriculture by youths (Adesina and Favour, 2016). Although these studies highlight that socio-economic factors influence youth participation in agriculture, those may not be related to all countries and all areas in a country. Therefore, this study examines the socio-economic factors that influence youth participation in agriculture in Sri Lanka.

2. Research Methodology

This study examined the factors that influence youth participation in agriculture activities. The sample for the analysis consisted of 75 youths who were purposively selected. A structured questionnaire was used to collect data from respondents.

2.1. Study area

Galenbindunuwewa divisional secretariat division is located in the Anuradhapura district. Galenbindunuwewa divisional secretariat division lies in the extent of 292.489 km² with 41 Grama Niladari divisions (Census codes of Administrative

Units, North Central Province Sri Lanka), and Huruluwewa is the main irrigation source of this area
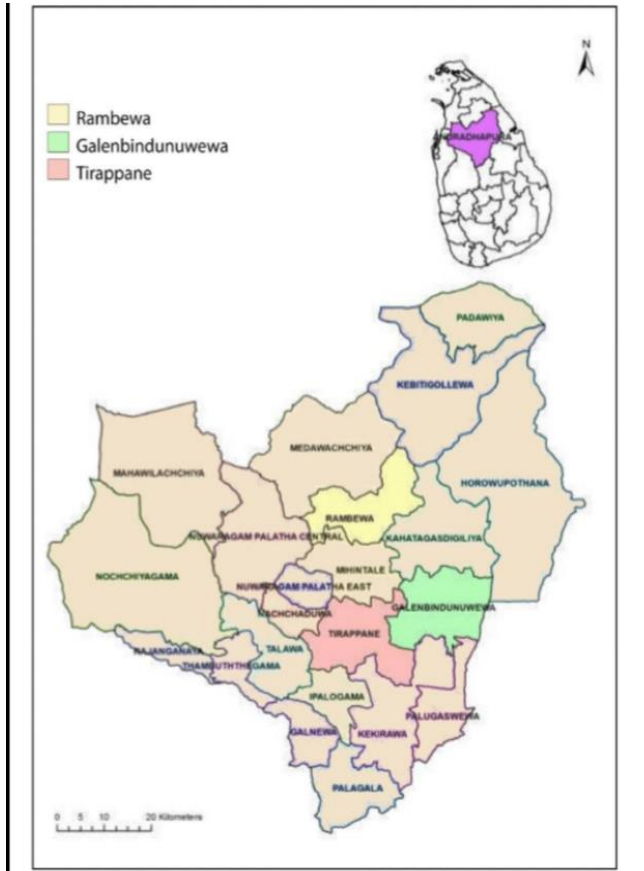
Figure 1. Map of Galenbidunuwewa showing the study location

2.2. Conceptual Framework

The framework guiding this study includes factors influencing youth involvement in the agriculture sector (Figure 1). The elements are categorized into three groups. The independent variables include economic factors, social factors, and infrastructure facilities. Youth involvement in agribusiness is the dependent variable. The conceptual framework was used to generation and analysis of data.

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┌─────────────────────────────┐
│ Economic factors            │
│ Credit facility             │
│ Household income            │
│ Land size                   │
└─────────────────────────────┘
                                          ┌───────────────────────────┐
┌─────────────────────────────┐          │ Youth involvement         │
│ Social factors              │          │                           │
│ Gender                      │ ───────► │ (Level    of    youth     │
│ Education level             │          │ involvement)              │
│ Marital status              │          │                           │
│ Household size              │          └───────────────────────────┘
└─────────────────────────────┘

┌─────────────────────────────┐
│ Infra-structure facilities  │
│ Experience/ training        │
│ Water availability          │
└─────────────────────────────┘
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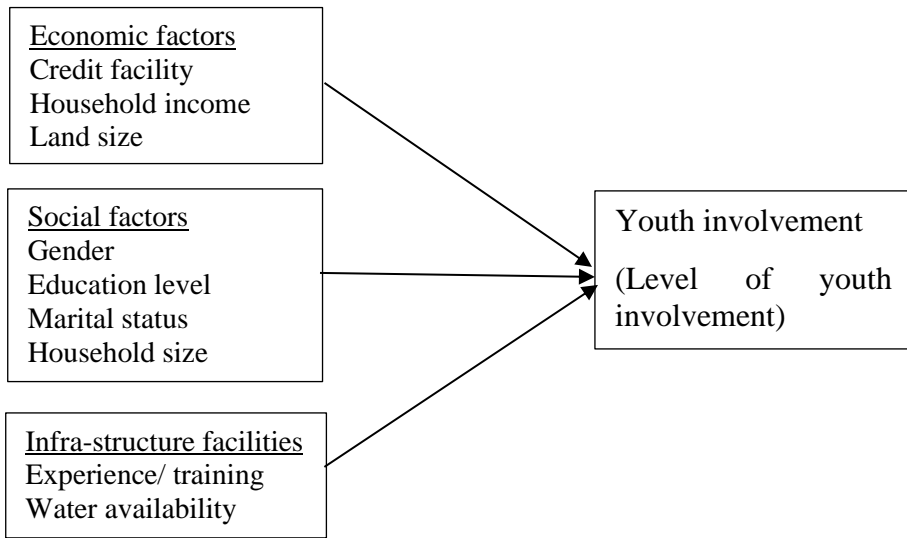
Figure 2: The conceptual framework of the factors influencing agriculture participation.

Table 1: Explanatory variables and description

Independent/Explanatory Variable	Variable description	Measurement Type
The education level of consumers	The level of education of the respondent (number of schooling years)	Continuous
Marital status of consumers	Marital status of the respondent (1= Married, 0= Single)	Categorical (Dummy)
Gender	The gender of respondent (1= male, 0 = female)	Categorical (Dummy)
Monthly Income	Monthly income of respondent (Rupees)	Continuous
Number of households	Number of households in the family (number of members)	Continuous
Land size	Land size of the respondent (Acres)	Continuous
Credit facility	Access to credit (1= yes,0= no)	Categorical (dummy)
Water facility	Water availability for cultivation (1= enough facility, 0 = not enough facility)	Categorical (dummy)
Experience/training	Level of experience (1= yes, 0= no)	Categorical (dummy)

The logistic regression model was used at a 0.05 level of significance to analyze agriculture participation factors. The logistic regression model is a qualitative choice model to explain the relationship between a dependent discrete variable and explanatory variables (Polson & Spencer, 1991). The logistic model for the binary variables, which assumes that the dependent variable is binary, was used for this analysis. The model consists of a dichotomous outcome variable and nine independent variables (five dummy and four continuous variables).

The binary logistic regression model was specified as follows

$$Y = Ln\left(\frac{P}{1-P}\right)$$

$$Ln\left(\frac{P}{1-P}\right) = b_0 + b_1X_1 + b_2X_2 + \cdots\ldots + b_{11}X_{11} + e$$

Where,

Y = Dependent binary variables (Participate=1, non-participate =0)
P = Probability of participating in agriculture
Ln= Natural Logarithm factor
$b_0 =$ Constant
$b_1 - b_{11}$ = Regression coefficients
$X_1 - X_{11}$ = Explanatory variables
e = Stochastic error term
$\left(\frac{P}{1-P}\right)$ = Odd ratio (odds in favor of participation)

3. Results and Discussion

Table 1 presents the summary of the participation statistics of youths in the study area. The survey results showed that most respondents (56%) were not participating in agriculture activities, and the majority were female (71%).

Table 2: Participation of youths in agriculture

	Participating		Not participating	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Male	17	52	12	29
Female	16	48	30	71
Total	33	100	42	100

Source: Survey data 2019

Table 3: Factors influencing youth participation

Explanatory variables	Logistic coefficient	S.E.	Wald	df	Sig.	Exp(β)
X_1 = Gender	-1.819	.912	3.980	1	.046**	.162
X_2 =Education level	0.315	.372	.717	1	.397	1.370
X_3 =Marital status	-2.600	.891	8.520	1	.004***	.074
X_4 =Family income	0.000	.000	2.170	1	.141	1.000
X_5 =Land size	0.722	.424	2.897	1	.089*	2.059
X_6 =Household size	-1.196	.324	.364	1	.546	.822
X_7 =Credit availability/ financial facilities	1.546	.946	2.671	1	.102	4.693
X_8 =Water availability	2.152	.887	5.882	1	.015**	8.603
X_9 = Experience / training	1.701	.803	4.487	1	.034**	5.479
Constant	-3.075	4.311	.509	1	.476	.046

***; **,* denotes statistically significant at 1%, 5% & 10% levels.
Source: Author calculation using SPSS (Version 10)

Table 3 shows the binary logistic regression result of this study. As depicts in table 3, gender, marital status, water availability, and experience are statistically significant with a 95 percent confidence level. Land size also significantly impact youth participation in agriculture but 90 percent significant level. Educational level, family income, household size, and credit availability are not statistically significant for youth participation in agriculture.

The marital status has a coefficient of -2.600, and the expected β value is 0.074; this implies that marital status negatively influences youth participation in agriculture, with an additional increase in the number of married youth decreasing the probability of participating by 260 percent. The expected probability of experiencing married youths in agriculture is high, and this research implies a negative sign. The majority of married female youths are doing agricultural-related activities in this area than male married youths.

The finding reveals that water availability increases the predicted probability of participating in agriculture by youths. From table 3, water availability has a coefficient of 2.152, the expected β value is 8.603. The result implies that water availability positively influenced the intensity of participating in agriculture, with additional water availability increase the probability of participating by about 215 percent. Moreover, youths' experience regarding agriculture activities has a 1.701 coefficient which indicates that an increase of training or experience for youths increased the probability of participating by about 170 percent.

The gender of youths also has a significant effect on participating in agriculture denotes coefficient is -1.819. There is a negative relationship between gender and youth participation in agriculture. It means that the increase in the number of male youths decreases the probability of participating by 182 percent. This finding is not an expected probability in agriculture for male youths.

The binary logistic coefficient of land size is 0.722 and statistically significant at 10 percent levels. This implies that land size positively influenced youth participation in agriculture. Suppose an additional increase in land for youths increases the probability of participating by 70 percent. Educational level, household size, family income, and credit availability do not significantly affect participation and should not be considered valuable while designing intervention strategies.

4. Conclusion and recommendations

Based on the statistical results from the study, it can be concluded that youth have a negative perception of agriculture, showing 56 percent of youths are not involved in agriculture activities. The findings from the survey highlighted that majority of female youth are not participating in the agriculture sector. The binary logistic model results showed that water availability and experience positively influenced the factors that affect youth participation in agricultural activities. The variable gender and marital status have a negative impact on participating youths in agriculture, while the variable education level, family income, household size, and credit availability have not to affect youth participation. Based on the research findings, it is recommended that in order to develop agriculture activities among youths, irrigation facilities should be developed. Furthermore, a number of incentives programs such as training programs are needed to convince youths that agriculture can provide a good career among youths.

References

Adesina, T.K., Favour, E. (2016). Determinants of Participation in Youth-in-Agriculture Programme in Ondo State, Nigeria, Journal of Agricultural Extension.

Ahaibwe, G., Mbowa, S., & Lwanga, M. M. (2013). Youth engagement in agriculture in Uganda: Challenges and prospects. (Research Series No. 106). Kampala, Uganda: Economic Policy Research Centre.

Assaad, R., Roudi-Fahimi, F. (2007). Youth in the Middle East and North Africa: Demographic Opportunity or Challenge? Population Reference Bureau: Washington, DC, USA.

Bennell, P. (2007). Promoting livelihood opportunities for rural youth. In World Development Report; International Fund for Agricultural Development (IFAD): Rome, Italy.

Filmer, D., Fox, L. (2014). Youth Employment in sub-Saharan Africa; World Bank Publications: Washington, DC, USA.

Girard, P. (2016). Building a Country-Level Comparative Approach for Grasping the Youth Employment in sub-Saharan Africa, The French Agricultural Research Centre for International Development (CIRAD): Montpellier, France.

Ibrahim, Y. W., Henry, K. B., & Romanus, D. D. (2017). Examining the non-participation of some youth in agriculture in the Midst of Acute Unemployment in Ghana. International Journal of Modern Social Sciences, 6(2): 128-153.

Janeth, C., Saina, E., Kebeney, S., & Chepng'eno W. (2019). Socio-Economic Factors Influencing Participation by Farm Households in Soil Erosion Management in Chepareria Ward, West Pokot County, Kenya, Journal of Agriculture and Environmental Sciences December, Vol. 8, No. 2, pp. 75-85

Keese, M., Roseveare, D., Giguere, S.(2013). The OECD action plan for youth, giving youth a better start in the labor market. OECD, Paris.

Koira, A.K. (2014). Agribusiness in sub-Saharan Africa: Pathways for Developing Innovative Programs for Youth and the Rural Poor; The Master Card Foundation: Toronto, ON, Canada, 23p.

Leavy, J., Smith, S.(2010). Future farmers: Youth aspirations, expectations and life choices. Future Agric. Discuss. 13, 1–15.

Mukembo, S. C., Edwards, M. C., Ramsey, J. W., & Henneberry, S. R. (2014). Attracting youth to agriculture: The career interests of young farmers club members in Uganda. Journal of Agricultural Education, 55(5), 155-172. doi:10.5032/jae.2014.05155

Ommani, A.R. (2006). Job Creation for rural youth. Dehati Journal, 3(29): 41-46.

Polson, R.A., and Spencer, D.S.C. (1991). The technology adoption process in subsistence agriculture: The case of cassava in South Western Nigeria. Agricultural Systems 36:65-77.

Proctor, F.J., Lucchesi, V.(2012). Small-scale Farming and Youth in an Era of Rapid Rural Change; IIED/HIVOS: London,UK; The Hague, The Netherlands.

Samardick, R. (2000). Youth Employment in Agriculture. Retrieved 8 Sep, 2005 from http://www.bls.gov/opub/rylf/pdf/chapter5.pdf.

Sumberg, J., Anyidoho, A.N., Chasukwa, M., Chinsinga, B., Leavy, J., Tadele, G., Whitfield, S., Yaro, J. (2014). Young People, Agriculture, and Employment in Rural Africa, WIDERWorking Paper, No. 2014/080, The United Nations University World Institute for Development Economics Research (UNU-WIDER): Helsinki, Finland.

Twumasi, M.A., Jiang, Y., Acheampong, M.O. (2019). Determinants of agriculture participation among tertiary institution youths in Ghana. Journal of Agricultural Extension and Rural Development, 11(3), pp. 56-66

Umesh, G. N., & Odom, C. N. (2011). Role and Constraints of Youth Associations in Agricultural and Rural Development: Evidence from Aguata L.G.A of Anambra State, Nigeria. World Journal of Agricultural Sciences, 7 (5): 515-519.

Woolard, I. (2013). The Youth Unemployment Problem in South Africa within the International Context. Saldru, University of Cape Town.

Determinants of ICT Adoption and Usage: Evidence from Rural-Based SMEs in Nuwara Eliya District, Sri Lanka

A.M.G.D.S. Premathilaka. [1], H.G.K.N. Bandara [1], D.A.M. Perera [2]*

[*] *Corresponcence: kolithanishshankabandara@gmail.com*

[1] Department of Economics and [2] Department of Accountancy, Faculty of Business Studies and Finance, Wayamba University of Sri Lanka, Kuliyapitiya, Sri Lanka

Abstract

The phenomenon of the Internet has helped businesses and organizations to understand their existing business application and practices as well as adopt new methods of working, both for existing and potential customers among small and medium-sized enterprises (SMEs). This has enhanced firms' ability to gain a competitive advantage not only locally, but also internationally. This study examined the factors influencing ICT adoption, as well as its usage among SMEs in the Rural sector in Sri Lanka. The study took into consideration innovation diffusion theory (IDT) and characteristics influencing the adoption and usage of ICT among SMEs. in Sri Lankan context there is little empirical research conducted in rural sector SMEs. both primary and secondary data were used. the primary data was collected from 50 SMEs in the Nuwara Eliya district. The findings of this study indicate that the cost of using ICT discourages SMEs in the Nuwara Eliya District from adopting and using those facilities in their businesses. While, the adoption and use of ICT among SMEs in the Nuwara Eliya District is promoted and encouraged by SME owners and managers' ICT knowledge, available ICT infrastructure, and perceived benefits of ICT infrastructure, according to this study. The theoretical implications of this study are the contribution to the literature on ICT adoption and diffusion. and also, practical implications apply to SMEs, training institutions, ICT vendors, and consultants.

***Keywords:** Information and communication technology, Rural-based, SMEs*

1. Introduction

Small businesses make considerable commitments to national economics and are assessed to represent 80% of worldwide financial development (Julta, Bodorik, & Dhaliwal, 2002). And therefore, small and medium enterprises (SMEs) are identified as the foundation of both developing and developed countries ' economies (Vijayakumar, 2013). SMEs are the key source of job creation, productivity, and development of most countries (Rogers, 2003).

The contribution of SMEs to the Sri Lankan economy is also substantial (Malawige, and Nanayakkara, 2014). Therefore, the SME sector has been designated as a key strategic sector in the Sri Lankan economy, with the potential to foster inclusive

economic growth, regional development, job creation, and poverty reduction. Small and medium-sized firms are considered the backbone of the Sri Lankan economy by the government since they account for more than 75 percent of all businesses, supply 45 percent of employment, and contribute 52 percent of the country's Gross Domestic Production (Gunawardana, 2020). The agricultural sector is one of the primary areas that is fueled by SMEs in Sri Lanka. In the agricultural sector, SMEs account for over 90% of the total enterprises present in it. According to the records of the Department of Census and Statistics in the year of 2013/2014, SME establishments in Sri Lanka accounted for up to 1.017 million providing livelihood to nearly 2.225 million individuals in the non-agricultural sector.

Definition of SMEs

In general terms, all micro, small, and medium businesses are referred to as SMEs. Since SMEs are defined differently in different nations, the definitions of SMEs vary by country. The total number of employees, annual turnover, and total investment are some of the most widely utilized yardsticks in defining SMEs. The SME policy framework in Sri Lanka identifies SMEs based on the number of employees and yearly turnover (Table 01).

Table 1: Defining SMEs in Sri Lanka

Size / Sector	Criteria	Medium	Small	Micro
Manufacturing	Annual Turnover	Rs.Mn.251-750	Rs.mn.16-250	Less than Rs.mn.15
	No.of Employees	51-300	11-50	Less than 10
Service	Annual Turnover	Rs.Mn.251-750	Rs.mn.16-250	Less than Rs.mn.15
	No.of Employees	51-200	11-50	Less than 10

Source: National Policy Framework for SME Development, Ministry of Industry and Commerce, (2016)

According to Table 01, In Sri Lanka, a business is considered an SME if its number of employees does not exceed 300 individuals and if its revenue does not exceed 750 million LKR.

ICT adoption in the SMEs

Sri Lankan SMEs are mostly rural-based. At the same time, because of various reasons the adoption and the usage of ICT seem to be comparatively very low among the SMEs. ICT is having a significant impact on today's business environment, and its use is rapidly transforming worldwide labor, production, and commercial procedures between businesses and customers. Therefore, different scholars underline that ICT should be used by SMEs to gain a competitive advantage, and outperform their competitors.

Without ICT, no organization can thrive in today's competitive world (Spanos, Prastacos, and Poulymenakou, 2002). It is an electronic and interactive bridge between businesses and their stakeholders, including customers and material suppliers. Among other modern ICTs, mobile phones, provide a tool for SME owners to effectively communicate knowledge and information about products, markets, and technology, allowing them to apply the knowledge directly to increase their output and gain easier market access (Chhachhar et al., 2014).

Corrales and Westhoff (2006) defined ICT adoption as "the choice an individual makes to accept or reject a particular innovation and the extent to which that innovation is integrated into the appropriate context." A substantial amount of research has been done in the previous decades to determine factors that influence ICT adoption (Nazrul Islam, 2016; Fahad A. et al., 2017), but very little study has been done on ICT adoption in Small and Medium Enterprises. The majority of large businesses are concerned about the use of new technologies to support their operations. Despite the fact that large corporations account for the majority of ICT adoption, SMEs are increasingly incorporating technology into their operations.

On the other hand, during the last three decades, the use of ICT in SMEs has increased substantially, and it now plays a critical role in today's knowledge-based economy. It is used in a wide range of domains in a variety of small and medium scale enterprises. Email, phones, mobile devices, fax machines, and video communication have traditionally been included in ICT components, but the list continues to grow as technology advances and disruptive technology becomes more widely available in the huge international market.

The explosion in the use of information and communication technologies has important ramifications for economic and social development, and it has pervaded every element of human life (Shanker, 2008). ICT can help many organizations enhance, coordinate, and regulate their operations, as well as boost the use of management systems like customer relationship management (CRM). As a result, information and communication technology is seen as a critical tool for the efficient management of any firm and the delivery of services to its clients (Spanos, Prastacos, and Poulymenakou, 2002).

Understanding the importance and the challenges faced by SMEs in the adoption of ICT, the Ministry of Industry and Commerce has developed a national policy framework for SME development, to provide improved access to appropriate and affordable modern technology (NPFSD, 2016). This policy framework recommended several important strategies, including the creation of a strong network, platform, and relationship between SMEs and technology providers, strengthening technology transfer programs, expanding the reach of technology demonstration platforms and centers in the industrial park, and holding special technology showcase and dissemination exhibitions, promoting and conducting special technology transfer and diffusion programs to encourage SMEs to adopt modern technology.

Statement of the Problem

The background of the study highlighted several advantages that can be derived from adopting ICT in business in the prevailing hyper-competitive business environment. ICT can be utilized to increase agility in a variety of business areas, including service delivery, customer service, expanding product lines, customer access, and business continuity (Riyami and Fathi, 2013). Despite the numerous benefits revealed from the use of ICT to improve SMEs' performance, ICT adoption in rural-based SMEs is still relatively low when compared to large organizations and urban-based SMEs. Therefore, it is critical to investigate what factors influence ICT adoption of rural-based SMEs in order to improve their performances.

Objectives of the Study

This research aims to examine the determinants of ICT adoption and usage among rural-based SMEs to enhance their business performance. The secondary objectives of this study were:

(a) To determine the relationship between the rural-based SME owners' ICT knowledge and their adoption of ICT.

(b) To analyze the relationship between the cost of using ICT facilities and the adoption of ICT by SMEs.

(c) To investigate the relationship between existing ICT infrastructure and the use of ICT among rural-based SMEs.

(d) To determine the relationship between the perceived benefits of ICT and the use of ICT in rural-based SMEs.

Recommendations were also made based on data about how ICT adoption affects rural-based business performance and how it may be improved.

2. Literature Review

The modern situation, business world has been influenced by ICT and the application of ICT among businesses is widespread. ICT is quickly changing global production, work, and business methods and trade and consumption patterns in and between enterprises and consumers (Alam, 2009). Denni (1996) said that every business must bring ICT into their business operation and take advantage of the benefits they offer. As the world economy, continues to move toward increased incorporation as a result of advances in information communications technology, some of the greatest opportunities for small businesses will derive from their ability to participate in the regional and international markets (Alam, 2009).

Nowadays small businesses are increasingly using and adopting ICT due to the advent of personal computers (PCs), cost-effectiveness, and cheaper ICT products. "The use of ICT can improve business competitiveness with the internet providing numerous opportunities for SMEs to compete equally with large corporations." (Alberto and Fernando, 2007) Fundamentally, SMEs differ from large businesses in that they have

specific computing requirements and technology acceptance patterns. Therefore, in recent decades, the use of ICT by SMEs has sparked a great deal of interest among researchers, governments, and international organizations (Kabongo, and Okpara, 2014). For instance, Husein and his colleagues (2021) tried to figure out what factors influence ICT adoption in Somalia's small-scale agribusinesses. According to their findings, relative advantage, complexity, top management support, and competitive pressure factors all play a role in ICT adoption in Somalian agriculture operations, while ICT prices and vendor support had little bearing on ICT adoption in agricultural businesses. This study suggests that insight and motivation, rather than financial and external support, drive ICT adoption in Somalia.

Agriculture is considered a vehicle for growth in Pakistan, as it is in many developing countries. Fahad et al. (2017) investigated farmer community attitudes of electronic media and the association between several demographic features of respondents and the usage of electronic communication via TV and radio in Khyber Pakhtunkhwa (KPK) of Pakistan. Their findings showed that extension professionals should encourage and teach farmers to use electronic media (TV, radio, hotline, internet, mobile) to learn about innovative agriculture production techniques.

Many organizations rely heavily on ICT solutions to develop and grow their operations (Asgarkhani and Young, 2010). The availability of landline or mobile communications, whichever is cheaper or more convenient for business, allows SME operators to communicate with their suppliers and customers without having to make personal visits. After mastering basic communication skills, the next ICT upgrade is usually a PC with basic software (Irefin, 2012). Irefin (2012) states that "without internet connectivity, SMEs can use PCs for basic word processing, accounting, and other business practices. With the internet, SMEs can use more advanced communication features such as file sharing, website creation, and e-mail. This may be sufficient for most SMEs, especially those in service industries such as tourism and other service industries.

In Anambra State, Nigeria, Moses C. Olise and his team (2014) investigated the factors of ICT adoption for enhanced SME performance. Their research revealed that there is a considerable disparity in SMEs' levels of awareness and ICT facility use trends. The capital basis, turnover, and asset worth of the companies studied all have an impact on ICT adoption. They also found that SME owners' capital input, marital status, and business experience have a favorable and substantial association with their output performance.

Shiels, McIvor, and O'Reilly (2003) looked at how new technologies are introduced and implemented with the goal of establishing integration with business operations. Their findings show that company and industrial sector characteristics influence the extent to which SMEs adopt and use ICTs to support business activities. Alberto and Fernando (2007) aimed to investigate the significance of five factors in ICT adoption in Spain: the environment, company structural characteristics, human capital, competitive strategy, and internal organization. Their findings emphasize the significance of examining each ICT separately, as well as the importance of

institution size, international ownership, and a highly-skilled workforce in ICT adoption. The diffusion of certain parts of ICT within enterprises is also aided by quality control systems and team-based work organization.

Ioannis, Alexandra, Efthymia, and Aggelos (2017) investigated the factors that influence ICT adoption in SMEs. Firms' technological competencies, workforce human capital, and internal organization all play a role in ICT adoption, as evaluated by five indicators: company intentions toward ICT implementation, ICT infrastructure, internet integration, e-sales, and e-procurement. They came to the conclusion that cooperation in innovation and R&D, well-educated and skilled staff, decentralized decision-making, and visionary leadership all help SMEs adopt new technology.

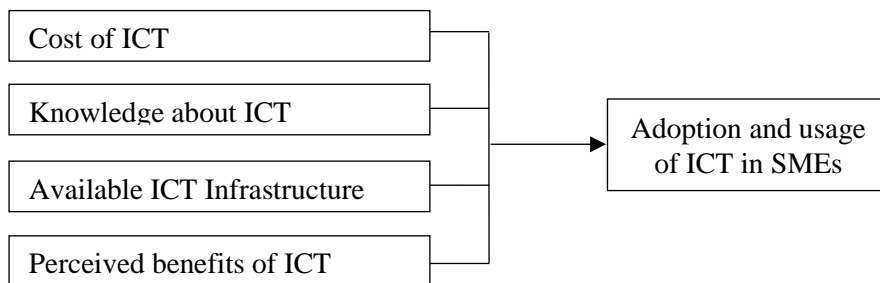Based on these scholarly works the following conceptual framework was designed.

Figure 1: Conceptual Framework

Research Hypotheses

Following hypotheses were analyzed, studied, and interpreted in this study.

H_1: The cost of using ICT discourages the adoption and usage of ICT among SMEs in the Nuwara Eliya District.

H_2: The knowledge of using ICT influences the adoption and usage of ICT among SMEs in the Nuwara Eliya District.

H_3: The available ICT infrastructure promotes the adoption and usage of ICT among SMEs in the Nuwara Eliya District.

H_4: The perceived benefits of ICT infrastructure encourage the adoption and usage of ICT among SMEs in the Nuwara Eliya District.

3. Research Methodology

Diffusion is the process by which an innovation is adopted by members of a certain community. The most frequently cited work related to dissemination is Diffusion of Innovation (IDT) (Rogers, 1995). As Rogers points out, diffusion is not a single all-encompassing theory, but rather several theoretical perspectives that draw on the general concept of diffusion; that is, it is a meta-theory. Four factors influence the adoption of an innovation by organizational members: (1) the innovation itself, (2) the communication channels used to disseminate information about the innovation,

(3) the timing, and (4) the nature of the group to which it is introduced (Rogers, 1995). According to Rogers, there are four main theories related to the diffusion of innovations. They are (1) innovation decision-making theory, (2) individual innovation theory, (3) adoption rate theory, and (4) attribute perception theory. This study focuses on individual innovation theory and perceived attribute theory as they help to understand the relationship between the innovator characteristics and the adopters' categories.

The survey was done through a personal interview with small and medium business owners in Nuwara Eliya, a city in the hill country of the Central Province, Sri Lanka. The target populations of the study were small and medium businesses in the Nuwara Eliya area, albeit the exact number of the population could not be determined due to a lack of a reliable database. As a result, the study's sampling approach was non-probabilistic (convenience sampling). The research was conducted in line with ethical considerations.

A descriptive study with a sample size of 50 SMEs was done, with data obtained using a structured and self-administered questionnaire. The purpose of the study was presented to the owners and managers of the randomly selected SMEs, and only those who consented to give the necessary information were invited to complete the questionnaire. Also, a pilot telephone-based survey was initially conducted leading to 05 filled questionnaires.

The four factors that influence ICT adoption – the cost of using ICT, ICT knowledge, ICT infrastructure availability, and perceived benefits of ICT – were presented as independent variables based on prior research, and the effects of these factors on ICT adoption were explored. A five-point Likert scale was used to assess these factors. The answers ranged from strongly disagree to strongly agree, with 01 indicating strong disagreement and 05 indicating strong agreement. Descriptive analysis, Regression analysis, and Pearson`s correlation analysis were performed with the aid of the Statistical Package for Social Sciences (SPSS *Version 25*), which was used to test the hypotheses of this study.

For this study, the following regression equation was formed.

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where:

Y = Dependent Variable (adoption and usage of ICT in SMEs)

β_0 = Intercept, and β_{1-4} = Beta coefficient

X_1 = Cost of ICT, X_2 = Knowledge about ICT, X_3 = Available ICT infrastructure, and X_4 = ICT perceived benefits.

ε = Error term

4. Data Analysis

The research questionnaire contained three sections: Section I was designed to gather information related to the respondents' demographics. It collects data on the individual's and institution's demographics, such as gender, age, educational credentials, business type, experience, and the number of employees. Section B gathered information related to the independent variables (i.e. factors affecting the usage of ICT), and Section C was designed to gauge the ICT adoption and usage of SMEs. Respondents' views of these factors were evaluated using a five-point Likert scale. The responses ranged from strongly disagree to strongly agree, with 01 being strong disagreement and 05 representing strong agreement. Other questions of the survey had pre-determined answer options.

Reliability Analysis

Cronbach's alpha test was performed to measure the reliability coefficient. All the measurements of independent variables had a Cronbach's Alpha value over 0.708, indicating a satisfactory level of reliability. Cronbach's Alpha for ICT adoption measures was estimated to be 0.805, which is considered great for the study.

Table 02: Reliability Test

Variables	Cronbach's Alpha	No of Item
Cost of ICT	0.708	5
Available ICT infrastructure	0.799	5
Knowledge about ICT	0.729	5
Perceived benefits of ICT	0.782	5
Adoption and usage of ICT	0.805	5

Therefore, the reliability of all constructs is 71% and above which means all variables are closely associated and accepted to proceed with the study.

Descriptive Analysis

Descriptive statistics were calculated to identify the basic nature of the research variables and four independent variables were measured using five points Likert scale. These statistics are summarized in Table 03.

Table 03: Descriptive statistics

Variable	Mean	Std. Deviation	Skewness		Kurtosis	
			Statistic	Std.Error	Statistic	Std.Error
Cost of ICT	1.8700	.68557	1.847	.337	3.897	.662
Available ICT infrastructure	3.4600	.58169	-2.307	.337	4.831	.662
Knowledge about ICT	4.1550	.69232	-2.392	.337	6.771	.662
Perceived benefits of ICT	3.8400	.73151	-1.003	.337	1.739	.662
Adoption and usage of ICT	4.0250	.73062	-2.065	.337	5.291	.662

The findings confirm that most of the SME owners and managers in the Nuwara Eliya district use some form of ICT in their business ($\bar{x}$ = 4.03, SD = 0.731). According to Table 03, the mean value of the cost of ICT was 1.87 and the standard deviation was 0.662 ($\bar{x}$ = 1.87, SD = 0.662). In that instance, the majority of depressed respondents chose the disagree level on a five-point Likert scale, indicating that they had a negative perception of the ICT cost. However, the respondents have demonstrated a moderate level of agreeableness to the availability of ICT infrastructure ($\bar{x}$ = 3.46, SD = 0.582) on five-point Likert scale.

When the owners and managers of the selected SMEs were inquired about the knowledge of ICT, the majority accepted that they have adequate knowledge in ICT ($\bar{x}$ = 4.15, SD = 0.692) which can be used to enhance the business performance. The mean value of the respondent's agreeableness to the perceived benefits of ICT indicates that the majority of respondents ($\bar{x}$ = 3.84, SD = 0.732) have a positive response. When asked about their ICT adoption and usage, the majority of SME owners and managers said they use it in their daily operations.

Correlation Analysis

The Pearson correlation coefficient (ρ) metric was used to determine the degree to which the determinants of ICT usage and adoption of a different form of ICT by the SMEs in Nuwara Eliya district are associated. The correlation coefficients and their significant values are summarized in Table 04.

Table 04: Pearson Correlations

Attribute	Coefficient	Adoption of ICT
Adoption and usage of ICT	Pearson Correlation	1.000
	Sig. (1-tailed)	-
Cost of ICT	Pearson Correlation	-.666**
	Sig. (1-tailed)	.000
Knowledge about ICT	Pearson Correlation	.370**
	Sig. (1-tailed)	.004
Available ICT infrastructure	Pearson Correlation	.289*
	Sig. (1-tailed)	.021
Perceived benefits of ICT	Pearson Correlation	.466**
	Sig. (1-tailed)	.000

*. Correlation is significant at the 0.05 level (1-tailed).

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

The figures in Table 04 show the strength and direction of the linear association between the adoption of ICI by the SMEs and the determinates of ICT usage by those businesses with no assumption of causality. A statistically significant negative correlation is observed between the cost of ICT and the ICT usage by the SMEs ($r = -.666$, $p < 0.01$). Therefore, researchers conclude that there is a negative correlation between the cost of ICT and the ICT usage of SMEs in Nuwara Eliya district. In short, if the cost of ICT increases, the usage of ICT by SMEs decreases with the same magnitude (and vice versa). Tan *et. al.* (2010) also confirmed that the expensive price of the software is a significant barrier hindering internet-based ICT adoption while the service SMEs do not perceive it to be so.

The Pearson correlation coefficient between the ICT usage of SMEs and their ICT knowledge ($r = .370$, $p < 0.05$), and perceived benefits of ICT ($r = .466$, $p < 0.05$) signifies that the two variables being compared have a moderate positive relationship; when one variable move higher or lower, the other variable moves in the same direction with the same magnitude. Weak positive correlations were observed between the adoption of ICT by the SMEs and the available ICT infrastructure ($r = .289$, $p < 0.05$).

Regression Analysis

To estimate an average causal effect of determinants of ICT usage on the adoption of ICT in SMEs, the researchers used regression analysis. Also, the regression

coefficients were used to determine whether the selected variable is a positive or negative impact on the dependent variable.

Table 05: Regression Analysis

R Square 0.500	Adj. R Square 0.456		Sig. value 0.000	F value 11.254		Collinearity Statistics	
	Unstandardized Coefficients		Standardized Coefficients				
Model	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	4.011	.752		5.334	.000		
Cost	-.629	.131	-.590	-4.790	.000	.733	1.365
knowledge	.065	.154	.062	.424	.674	.778	1.285
Infrastructure	.247	.150	.197	1.649	.106	.523	1.911
Benefits	.157	.140	.157	1.122	.268	.564	1.774

The proportion of the variance in the response variable that can be explained by the predictor variable is measured using R-squared (R2). According to the statistics in Table 05, the R-squared is 0.5000, indicating that the selected determinants of ICT usage can explain 50% of the variance in ICT adoption by SMEs. Therefore, researchers concluded that the cost of ICT, available ICT infrastructure, ICT knowledge, and perceived ICT benefits have 50% ability to explain the total variation of ICT usage.

The adjusted R-squared was also used to examine how well various regression models fit together. The Adjusted R-squared for this data set is 0.456. According to the standard error of the regression, it was observed that the observed values fall an average of 0.752 units from the regression line. The F statistic (11.254) indicates that the regression model provides a better fit to the data, and the p-value indicates that the regression model as a whole is statistically significant (F = 11.254, p < 0.05).

A negative coefficient of the cost of ICT indicates a negative relationship with the ICT adoption of SMEs (β = -.629, p < 1.05). All other three independent variables (ICT knowledge, infrastructure, and benefits) show a positive relationship with the ICT adoption of SMEs. This finding supports the first hypothesis of this study (H_1), and thus, researchers concluded that the cost of using ICT discourages the adoption and usage of ICT among SMEs in the Nuwara Eliya District.

The p-values of these variables, on the other hand, imply that their impact on ICT adoption in SMEs is statistically negligible. As a result, researchers conclude that the

effect of ICT knowledge (β = .065, p = .674), available ICT infrastructure (β = .247, p = .106), and perceived benefits of ICT (β = .157, p = .268) on ICT adoption of SMEs in Nuwara Eliya district is statistically insignificant.

The coefficients in Table 05 are used to write the estimated regression equation:

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

In this research, the estimated regression equation is: ICT adoption of SMEs = 4.011 - .629 (ICT cost) + .065 (ICT knowledge + .245 (ICT infrastructure) + .157 (ICT benefits) + ε

These findings support the last three hypotheses of this study. Accordingly, researchers conclude that the adoption and usage of ICT among SMEs in the Nuwara Eliya District is promoted and encouraged by the SME owners and managers ICT knowledge (H_2), the available ICT infrastructure (H_3), the perceived benefits of ICT infrastructure (H_4). As a result, the findings of this study confirm that, aside from the ICT cost coefficient, each individual coefficient is understood as the average increase in the response variable for each one-unit increase in a particular predictor variable, providing all other predictor variables are held constant.

5. Conclusion & Recommendation

The main purpose of this study was to look into information and communication technology (ICT) adoption among rural-based SMEs in Nuwara Eliya district, Sri Lanka, and see how they use ICT for their business purposes. Four independent variables, namely the cost of using ICT, knowledge in ICT, the availability of ICT infrastructure, and the perceived benefits of ICT were used in this study, while the ICT adoption was considered as the dependent variable. The independent variables were measured using 27 questions devised by the researchers. 50 SMEs were randomly selected as the sample of this study. The main statistical approaches utilized to investigate the association between influencing factors and ICT adoption in SMEs were correlation analysis and regression analysis.

As per the findings, researchers observed that several basic ICT technologies are regularly used by SME owners in the Nuwara Eliya district. The Pearson correlation analysis revealed an inverse relationship between the cost of ICT and the adoption of ICT in SMEs. The respondents are of the view that the use of some ICT tools is expensive and therefore, they reluctant to use them in their businesses. However, a positive relationship was observed between ICT knowledge, ICT infrastructure, ICT perceived benefits, and the ICT adoption of SMEs. The Pearson correlation coefficient between the ICT usage and their ICT knowledge, and perceived benefits of ICT indicates that the two variables being compared have a moderate positive relationship, which indicates that when one variable moves higher or lower, the other moves in the same direction with the same direction. Also, findings revealed that the use of ICT by SMEs and the availability of ICT infrastructure had weak positive relationships.

According to the coefficient of regression analysis, the cost of ICT negatively impacts the use of ICT in SMEs. The ICT knowledge, ICT infrastructure, and perceived benefits of ICT positively impact the usage of ICT in SMEs. In contrast, the p-values of these variables indicate that their impact on ICT adoption in SMEs is statistically insignificant. As a result, researchers conclude that the effect of ICT knowledge, available ICT infrastructure, and perceived benefits of ICT on ICT adoption of SMEs in Nuwara Eliya district is statistically immaterial.

Based on the above findings, researchers recommend that the government should further encourage SMEs to use mote ICT tools in their businesses. Since they are reluctant to use ICT because they are expensive, some policy measures are needed to overcome the ICT cost issue. Also, the knowledge in ICT should be enhanced among the owners and managers of rural-based SMEs. SME owners and managers, in particular, should be encouraged to expand their awareness of emerging ICT trends and practices within their industry, which will help them to outperform their competitors, especially in the cross-border markets. In addition to increasing their knowledge, their perceptions of the benefits of ICT can also be improved.

References

Alam, S., (2009), ICT Adoption in Small and Medium Enterprises, *International Journal of Business and Management,* 04 (02): 102-105.

Alberto Bayo-Morionesa, and Fernando Lera-López, (2007), A firm-level analysis of determinants of ICT adoption in Spain, *Technovation*, June–July, 27 (6–7): 352-366

Asgarkhani, M., and Young, A. (2010) Industry view of ICT roles and skills in Canterbury. *1st Annual Conference of Computing and Information Technology Research and Education*, New Zealand.

Chhachhar A.R., B. Querestic, G.M. Khushk, S. Ahmed, (2014), Impact of ICTs in agriculture development, *Jurnal of Basic Applied Science Research*, 04: 281-288

Corrales Javier, and Westhoff Frank. (2006), Information Technology Adoption and Political Regimes, November, *International Studies Quarterly*, 50(4): 911 - 933

D. Kabongo, J., and O. Okpara, J, (2014), ICT possession among Congolese SMEs: an exploratory study, *Journal of Small Business and Enterprise Development*, 21(2): 313–326

Department of Census and Statistics, (2013). *Non-Agricultural Economic Activities in Sri Lanka Economic Census 2013/2014 Sri Lanka*, Department of Census and Statistics: 35-76

Elisha, R., and Chiware, A., (2008). The use of ICTs in Namibia''s SME, *The electronic library*, 145-157.

Fahad A., Mohamed S.A.S., Muhammad, A. U., Muhammad M., and Mehmood A.N., (2017), Farmers' perceptions regarding the use of Information and Communication Technology (ICT) in Khyber Pakhtunkhwa, Northern Pakistan., *Journal of the Saudi Society of Agricultural Sciences*.

Gamage, A., (2003), Small and Medium Enterprises Development in Sri Lanka, *Meijo Review*, 155 -157.

Gibbs, D., and Tanner, K., (1997), Information and Communication Technologies and Local Economic Development Policies, *Regional Studies*, 765-774.

Gunasekara, D.E.W., (2012), Small and Medium Enterprises (SMEs), National Human Resources and Employment Policy. https://www.nhrep.gov.lk/index.php?option

Gunawardana D.P., (2020), The impact of COVID19 on the MSME Sector in Sri Lanka, Sri Lanka UN DESA/DSDG

Husein O.A., Abdikarim A.H., Murni M., Abdifatah F.A., (2021), Determinants of ICT Adoption Among Small Scale Agribusiness Enterprises In Somalia, *International Journal of Engineering Trends and Technology*, 69 (02): 68-76

Ioannis Giotopoulos, Alexandra Kontolaimou, Efthymia Korra, AggelosTsakanikas, (2017), What drives ICT adoption by SMEs? Evidence from a large-scale survey in Greece, *Journal of Business Research*, 81: 60-69

Irefin, I. A.-A. (2012). An investigative study of the factors affecting the adoption of Information and Communication Technology in SMEs in Nigeria, *Australian Journal of Business and Management Research*, 2

Jutla, D., Bodorik, P., and Dhaliqal, J. (2002), Supporting the e-Business Readiness of Small and Medium-Sized Enterprises: Approaches and Metrics, *Internet Research: Electronic Networking Applications and Policy*, 12(2): 139–64.

Kapurubandara, M., (2009), A framework to e-transform SMEs in Developing Countries, *The Electronic Journal on Information System in Developing Countries*, 43-46.

Lazarus, N., and Nduati, D., (2015), Factors affecting ICT Adoption in Small and Medium Enterprises, *European Journal of Business Management*, 274-276.

Malawige, I.R., and Nanayakkara, L.D.J.F., (2014), SME EIS Adoption: towards the development of EIS for SMEs in Sri Lanka, Proceedings of 2014 14th *International Conference on Advances in ICT for Emerging Regions* (ICTer): 172-178.

Malekian, A., (2010), What is Information and Communication Technology? *The Electronic Journal of Information System*, 45-47.

Maquire, S., Koh, S., and Magrys, A., (2007), The adoption of e-business and knowledge, *The International Journal*, 37-58.

Ministry of Productivity Promotion of Sri Lanka, (2015), Small and Medium Enterprises (SME) Sri Lanka:

Moses C. Olise, Theresa U. Anigbogu, Tonna D. Edoko, and Moses I. Okoli, (2014), Determinants of ICT Adoption for Improved SME's Performance in Anambra State, Nigeria, *American International Journal of Contemporary Research*, 04(7): 163-176

Nazrul Islam, (2016), The use of Information and Communication Technology (ICT) and Business Management: Contemporary Issues and Challenges, January, *SSRN Electronic Journal*

NPFSD, (2015, 2016), National Policy Framework for SME Development, Ministry of Industry and Commerce.

Ponnamperuma, E., (2000), SMEs in Competitive Markets, Country Paper, Asian Productive Organization Tokyo, 295-313.

Riyami, A., and Fathi, M., (2013), The role of ICT in International Business, *Oman Observer in Business*, 01-03.

Rogers, E. M., (2003), Diffusion of Innovations (5th ed), *The Turkish Online Journal of Educational Technology*, 05(2): 15.

Rogers, E.M., (1995), Diffusion of Innovations (4th ed.) New York: Free Press.

Sanchez, B., Ruiz, M., and Zarco, J., (2007), Problems and Perspectives in Management, ABI/ Information Global.

Shanker, D., (2008), ICT and Tourism: Challenges and Opportunities, *Conference on Tourism in   India – Challenges Ahead*, (May), 15-17.

Shiels, H., McIvor, R., and O'Reilly, D., (2003), Understanding the implications of ICT adoption: insights from SMEs, *Logistics Information Management*, 16 (5): 312-326.

Spanos, Y. E., Prastacos, G. P. and Poulymenakou, A., (2002), The relationship between Information and Communication Technologies adoption and Management, *Information and Management*, 39 (8): 659-675.

Swash, G., (1998), UK Business Information on the Internet, *New Library World*, 238-242.

Tan, K.S., Chong, S.C., Lin, B., and Eze, U.C., (2010), Internet-based ICT adoption among SMEs: Demographic versus Benefits, Barriers, and Adoption Intention, *Journal of Enterprise Information Management*.

Vijayakumar, S., (2013), The status of Small and Medium Enterprises and Promotions for their Growth in Sri Lanka, *International Journal on Global Business Management and Research*, 1, 13.
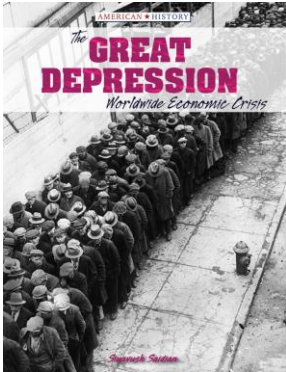
Book Review
American History: The Great Depression Worldwide Economic Crisis

S.W.G.K.Bulankulama

Department of Economics, Rajarata University of Sri Lanka
Email: gkbulankulama@gmail.com

Introduction

American History: The Great Depression: Worldwide economic crisis published by Lucent Press, an Imprint of Greenhaven Publishing, LLC, New York in 2018 | Series: American history | Includes index. Identifiers: ISBN 9781534561311 (library bound) | ISBN 9781534561328 (ebook) in exploring the American history book were made by Siyavush Saidian in which consist six chapters. Chapter one is for a Disaster, Chapter two for the Great Depression Begins, Chapter three for a Powerless President, Chapter four for a New Leader, Chapter five for Programs for Recovery and Chapter six for Hard Lives Made Even Harder Epilogue.

History of America

The United States is a relatively young country. It has existed as its own nation for more than 200 years, but compared to nations such as China that have existed since ancient times, it is still in its infancy. However, the United States has grown and accomplished much since its birth in 1776. How did the United States manage to develop into a global superpower in such a short time? The story of America is unlike any other filled with colorful characters, a variety of exciting settings, and events too incredible to be anything other than true.

The American economy has experienced with boom-bust cycle numerous times. One of the most recent bust periods, also called a recession, occurred between 2007 and 2008. During this financial crisis, hundreds of thousands of people lost their jobs, millions of people lost money, and nearly everyone was unhappy with the economy. The effects of this recession lasted for years, but despite its terrible scale and negative outcome, it is not the worst financial disaster to ever occur in America. The Great Depression, which lasted from 1929 to 1939, was undoubtedly the most devastating.

Chapter two of this book for the great depression degins, as government officials saw the 2007 economic collapse incoming, they did their best to prepare for it. Because of this, the effects of a total collapse were avoided, and though the financial impact was still large, it could have been much worse. The country was able to recover relatively quickly. The Great Depression, on the other hand, was a crippling disaster not just because of the initial economic failure, but also because it took a decade for the government to repair the market. After the stock market crashed, banks failed,

and millions of people lost their jobs, there seemed to be little hope of a better life. The general level of wages for workers rose. Some farmers made a lot of money. the whole value of many stocks and sharply reduced the values of others, a great number of people who had thought themselves rich, or at least well-off, found themselves with much less than they had thought they had, or with nothing at all.

The efforts of the Hoover administration to fight the Depression failed. Month by month, year by year, the country sank deeper and deeper into a financial pit. American business and manufacturing losses during Hoover's term were also staggering. More than 26,000 businesses failed in 1930, and more than 28,000 went under the year after. By 1933, more than 9,000 banks in the United States had failed and closed their doors. Reports estimate that these bank failures accounted for the loss of $140 billion for regular American citizens. Because depositors had no insurance to back up their money, millions of Americans lost their entire life savings in less than a day. With millions of people losing their jobs, their savings, or both home lessness rose sharply in the early years of the Depression.

Protesting unemployment demonstrated more aggressively, and they soon had to deal with the real army. Soldiers drove the veterans away with tear gas and then set fire to their shelters. The crackdown wounded and killed several protestors and police officers. These violent government reactions to discontent did not improve the national mood, and the spreading public opinion was that Hoover and his administration had to go. Historically, it is clear that the president did not cause the Depression. The unwise economic practices of the 1920s are the primary culprit. However, in spite of his good intentions, a bad situation grew worse on Hoover's watch.

The President who is Herbert Hoover's administration failed to do much to improve the disastrous economic and social effects of the Great Depression, his political part was a Republican was worried about the next presidential election. After all, Hoover was widely hated throughout the country for his ineffective policies, millions of people lost their jobs and savings on his watch, and the country was in the midst of its worst economic disaster ever.

In the chapter three was presented about the powerful president, three main explanations have been proposed to mitigate the risk emphasizing a different dimension in the Economic explanation, Social Explanation and Institutional explanation in which suggested the painful fiscal adjustments, better econom¬ic opportunities for the worse-off, with a determined focus on service delivery and social protection and focus on transparency and accountability, strengthening public financial management and espe¬cially public procurement. These policy action can be adjusted with all similarities for the countries all over the world.

In chapter four is with a new leader; Roosevelt had definite ideas for a path to financial recovery, and his political track record (He was the highly successful governor of New York from 1928 to 1932.) was positive. On Election Day in 1932, he won the presidency by a wide margin. He quickly started instituting new programs, policies, and reforms, which became known as his New Deal programs. His most

important task as president was to get the economy out of the financial gutter it had been stuck in for three years.

Roosevelt wanted to completely reorganize and revolutionize the federal government. To do so, he pushed through a startling amount of bills and policies. The number and magnitude of the federal programs he introduced in his first hundred days in office easily exceeded what some presidents had accomplished in their entire four-year terms. In March 1933, the same month in which he declared the bank holiday, Roosevelt called for the creation of a major new aid program. This organization was named the Civilian Conservation Corps (CCC). Run by the military, its primary function was to provide work for the hundreds of thousands of young men who did not have work. They would be employed to plant trees, fight forest fires, and dig ditches. Though this was not skilled labor, the CCC gave more than 3 million young men a job from 1933 to 1942. This not only reduced the unemployment rate, but also increased the amount of money being spent by civilians in the economy. Most importantly, the program allowed the young men who worked for it to survive. It was far from the only government-sponsored program in the 1930s to do so.

The Agricultural Adjustment Administration (AAA), formed in May 1933, was a bold and controversial piece of legislation. Its purpose was to increase the profits of poor farmers by having them reduce the amount of grain, corn, rice, livestock, and other items they produced. The hope was that, as these commodities became less common, they would be worth more. This would lead to a price increase for agricultural goods, and farmers' wages would increase as well.

Economists saw the wisdom of the plan, and farmers were happy to make more money. Though they are the most well-known, the CCC, AAA etc. were not the only important programs the Roosevelt administration introduced in the historic Hundred Days. Some of the others included the Economy Act, which was intended to reduce the size of the federal government; the Truth-in-Securities Act, which was organized to reform the stock market and make future crashes less likely; and the Home Owners Loan Act, which helped people of lower incomes obtain mortgages so that they could buy a home.

Chapter five for Programme for recovery though the American economy was helping it find its way back to prosperity. Moreover, the programs instituted during the Hundred Days were far from the only successful governmental actions taken by Roosevelt's administration against the Great Depression. He was elected president a total of four times. In this regard, the CCC was a hallmark program. In 1936 found that 82 percent of Americans were strongly in favor of the CCC because it found decent-paying work for millions of young men. The program lasted 9 years and at its height, employed 500,000 men simultaneously. Though it closed down in 1942, it likely would have remained active had the United States not entered World War II. After the country began fighting, most of the young men who would have found jobs through the CCC joined the military instead. Most of these large-scale employment programs implemented during the New Deal were designed to create new jobs, which

would allow the millions of unemployed Americans to earn money. Some of this money would be spent, and this would stimulate the depressed economy.

In chapter six in America was not as advanced. In fact, the vast majority of American women made only small gains against widespread prejudices during the 1930s. This was partly because of long standing social traditions that viewed men as the main breadwinners and heads of households. One component of this prejudice was the gender-typing of jobs. Between 1930 and 1940, in fact, the total employment of women actually increased. For this reason, some people thought that working women were taking jobs away from men, and thereby hurting both their families and the country. This sexist attitude explains in 1936 indicated that 82 percent of Americans believed employers should discriminate against married women. Another survey, conducted in 1939, "showed that 84 percent of insurance companies, 65 percent of banks, and 63 percent of public utility companies had restrictions on married women working.

Widespread unemployment and poverty also disrupted traditional family roles in communities all across the country. The usual status and responsibilities of men, women, and children in these families changed, sometimes dramatically. In particular, the status of the man as the primary breadwinner and head of the family diminished. Before the Depression, a man generally dominated because his job supported the family. When he could no longer provide for them, society began to experience some changes. If a man could not reliably make money, people began questioning why he was the leader of the family.

In addition, many men found themselves stuck hanging around the house. They were intruding into what had traditionally been the woman's sphere. In some families, however, men being stuck in the house all day led to negative consequences. Some couples, together all day and all night and suffering from poverty, unemployment, and hunger, were more likely to get into arguments. In some cases, a husband was unable to find work, but other members of his immediate family were able to secure a job. This could damage a man's pride and make him more likely to lash out violently at relatives. Though divorce rates during the Depression decreased, some historians claim that this is because people could not afford the legal fees of a divorce. Reports also indicate that the rate of marriage desertion (simply walking away from one's spouse) increased in the 1930s. Even in cases where parents stayed together, children suffered as well. Parents under stress commonly passed their own worries on to their sons and daughters

Concluding Remarks

Every country around the globe has its share of highs and lows. There are times of prosperity and times of discontent. This is especially true of countries that run on a capitalist economy. This kind of economic system is based on the idea that the ability to sell goods rests in the hands of private merchants, and it allows for the free market to develop with little government interference. Throughout history, this kind of system has been known to operate on a cycle of booms, with widespread riches and a thriving middle class, and busts, with massive poverty and unemployment. For the

most part, economists and governments try to make the bust periods shorter and less frequent and the boom periods longer and more prosperous. However, sometimes the market simply cannot sustain itself. The book has indicated the way of lessons from depression of American history to present economic depression of the countries in all over the world with pandemic.

The reporting of information in the book emphasizing a comprehensive facts of good governance from America and its lead towards a better and a clear descriptive analysis from the year of 1900. All facts relating to the failures and strength are explained and developed with the well matching content throughout the excellent writing in such a way that a reader is sequentially led to understand the facts for policy recommendations. Economic depressions are challenging, collecting and presenting information are user-friendly to think the way of policy action. This book absolutely is an exploratory explanation to overcome the economic depression. risk research and risk management practice for improvement of body scholarly wax.

RAJARATA ECONOMIC REVIEW

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This part should explain the methodology, the study area, sample selection and the methods of data collection.

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Results should be clear and concise. Results should compare and contrast with the literatures available in the subject area.

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