



Department of  
Humanities, Rajarata  
University of Sri Lanka

**The Journal of Studies in  
Humanities**

**Volume 5 (II) 2019**

**Financial Inclusion in Sri Lanka:  
Trends and Socioeconomic Determinants**

**Sisira Kumara Naradda Gamage**

*\*Corresponding author*

Department of Economics, Faculty of Social Science and Humanities,  
Rajarata University of Sri Lanka, Mihintale.

Email: naraddagamage@gmail.com

**S. H. T. Kumudumali**

Department of Operations Management, Faculty of Management  
University of Peradeniya.

Email: thakshila9510@gmail.com

**සංකේපය**

මූල්‍ය සේවාවන්ට ප්‍රවේශවීමේ අවස්ථාවන් ලබා ගැනීමේ හැකියාව දරිද්‍රතාවය අවම කිරීමට කුටුම්භ සුභසාධනය වැඩිදියුණු කිරීම සහ වැඩිදියුණු කළ ව්‍යාපාරික ක්‍රියාකාරකම් වර්ධනය පිළිබඳ දර්ශකයක් වේ. එසේම එය අනාගත ආයෝජන සහ මූල්‍ය කම්පන කළමනාකරණය සඳහා උපකාරී වේ. මෙම අධ්‍යයනයේ මූලික අරමුණ වන්නේ පුද්ගලයන්ගේ සමාජ-ආර්ථික ලක්ෂණ සහ මූල්‍ය සේවාවන්ට ප්‍රවේශ වීමේ අවස්ථාවන් සහතික විම අතර සම්බන්ධතාව විමර්ශනය කිරීමයි. ඒ අනුව මෙම අධ්‍යයනයේ දී පුද්ගල ජන සහ සමාජ ආර්ථික සාධකයන් වන ස්ත්‍රී පුරුෂ භාවය, වයස, අධ්‍යාපන මට්ටම, ආදායම, සහ රැකියාව යනාදිය විධිමත් මූල්‍ය සේවාවන් වන බැංකු ගිණුම්, ඉතුරු කිරීම්, විධිමත් ණය ලබා ගැනීම්, සහ විද්‍යුත් සේවාවන් සේවාවන්ට ප්‍රවේශ වීමේ අවස්ථාවන් සහතික විමහි බලපෑම් පරීක්ෂා කරන ලදී. ප්‍රතිපායන විශ්ලේෂණ මගින් ස්ත්‍රී පුරුෂ භාවය, වයස, අධ්‍යාපන මට්ටම, ආදායම, සහ රැකියාව යනාදිය රට තුළ මූල්‍ය ඇතුළත් කිරීමේ සංඛ්‍යාත විද්‍යාත්මකව හඳුනාගත හැකි සාධක බව අධ්‍යයනය හඳුනාගන්නා ලදී. ස්ත්‍රීන්ට සහ රැකියා විරහිත ජනතාවට මූල්‍ය සේවාවන්ට ප්‍රවේශ වීමේ අවස්ථාවන් සහතික කිරීමට රජය සහාය දිය යුතු බවත් රටේ මූල්‍ය ප්‍රතිපත්තිය ඩිජිටල් බැංකු සේවා කෙරෙහි වර්ධනයට අවධානය යොමු කළ යුතු බවට යෝජනා කරනු ලබයි.

මූල‍්‍ය පද: මූල්‍ය ඇතුළත් කිරීම්, පුද්ගල සමාජ ආර්ථික සාධක, ප්‍රතිපායන විශ්ලේෂණ ආකෘතිය, ශ්‍රී ලංකාව

## **Introduction**

Financial inclusion of a country is an indicator of poverty reduction, improved household welfare, and improved business activities, which helps people invest in the future and manage financial shocks. Financial inclusion can be simply defined as the individuals' capability to access financial services in the formal financial sector (Allen et al., 2016; Ozili, 2018; Fadi et al., 2019). The term 'financial inclusion' demands much attention from policymakers and academics as it has been considered as one of the United Nation's sustainable goals (Demirguc-Kunt et al., 2017). This helps minimize poverty levels (Neaime and Gaysset, 2018), improve social inclusion, and bring social-economic benefits (Sarma and Pais, 2011) to a nation. However, 40% of the worlds' adult populations do not have an account in a financial institution (World Bank, 2015). Financial inclusion can enhance the lives of the poor, women, and youth by investing in businesses, which eventually improves their competencies.

A universally accepted definition for the term 'financial inclusion' is rare. The UN millennium development goal defines financial inclusion as 'the financial services provided by sustainable institutions that have universal access, at a reasonable cost, to a wide range of financial services.' Also, the Consultative Group to Assist the Poor (CGAP) identified financial inclusion as 'households and businesses access to adequate financial services.' The critical dimensions that define financial inclusion have been identified as financial products, features of financial products, and delivery channels (Stein, 2010). Financial inclusion is measured mainly with three dimensions: outreach, usage, and quality of financial services (Amidzic, Massara, and Mialou 2014). Each indicator of financial inclusion measures a variety of standards in the financial sector. The outreach measures the geographic or demographic penetration, such as the number of branches per 1000 square kilometers or 1000 adults, usage measures the percentage of adults with at least one type of financial account, and quality indicators may comprise financial literacy, disclosure requirements, dispute resolution, and the costs of usage. The main indicators of financial inclusion identified by different scholars are the income group, age, gender, and education level (Allen et al., 2016; Demirguc-Kunt and Kalpper, 2012; Xiaoyan, 2019).

Financial inclusion is a country's essential goal that leads to the economic growth of the nations. It helps people invest in the future and manage financial risks, leading to poverty reduction to the desired minimum. Previous studies on financial inclusion have paid their attention to examining several significant areas such as financial inclusion with financial stability, economic growth, financial innovations, financial inclusion practices, etc. (Kim et al., 2018; Ozili, 2019; Fungáčová and Weill, 2015). Among them, a few scholars have identified the impact of the individuals' socioeconomic characteristics on financial inclusion in the global economy. In recent findings, it is rare to find studies based on the relationship between individuals' characteristics and financial inclusion.

In Sri Lanka, financial inclusion is identified as one of the priorities to achieve sustainable economic development. Sri Lanka financial market is also not well developed yet (Gamage, et

al., 2016). However, the country has considerable financial inclusion compared to South Asian countries due to its high level of physical access to financial services with widespread branches to the rural areas. Sri Lanka has achieved the highest financial inclusion level in the Asian region (Tilakarathne, 2016). As a developing country, Sri Lanka faces several critical challenges due to higher financial literacy and financial awareness, which enable people to use financial services effectively and more wisely. However, the micro, small, and medium enterprises (MSMEs), low-income households, youth, and women face difficulty in the limited or no access to formal financial services in Sri Lanka (Haq, et al., 2014; CBSL, 2019).

As shown by Thilakarathne (2016), 82.7% of the adults in Sri Lanka own an account at a financial institution. Sri Lanka takes the highest portion of account holders among the South Asian countries like Nepal, India, Bangladesh, and Pakistan (World Bank, 2015). Further, 83.1% of women, 79.8% of the poorest 40%, and 85.2% of young adults in Sri Lanka hold an account in a financial institution (World Bank, 2015). The borrowings and savings also play a critical role, which determines the financial inclusion of a country. Thus, Sri Lanka has limited literature available that addresses each individual characteristics of age, gender, income, and education on financial inclusion determinants. The minimal empirical evidence in Sri Lanka suggested that there is a high level of financial access. The households that have no access to financial services in Sri Lanka is only around 2% in 2010 (Tilakarathna, 2012; Kuruppuge et al., 2017). Tilakarathna's study further illustrated that high-income quintiles have more access to financial services. In this connection, the paper's main objective is identified as examining the implications of each socioeconomic characteristic (gender, age, income, education, employment) on financial inclusion indicators of formal account, formal savings, formal borrowings, and the use of digital services in Sri Lanka.

The paper consists of five sections. Following the introduction, section 2 discusses the literature review on the relationship between individuals' socioeconomic characteristics and financial inclusion, especially focusing on Sri Lanka, while Section 3 provides an overview of the research methodology. Section 4 provides a detailed analysis and findings on the impact of individuals' characteristics on financial inclusion in Sri Lanka, and finally, section 5 offers concluding remarks of the study.

## **Literature Review**

Financial inclusion is the process of ensuring that individuals have access to basic financial services in the formal financial sector. It faces difficulties in identifying a universally acceptable definition for the term *financial inclusion*. It defines differently by different authors and organizations. The UN millennium development goal defines financial inclusion as universal access to financial services at a reasonable cost. The Consultative Group to Assist the Poor (CGAP) defines financial inclusion as households and businesses' access effectively financial services (CGAP 2014). As per Allen et al. (2016) and Ozil (2018), financial inclusion can be simply evaluated as the process of ensuring individuals' accessibility to basic financial services.

The key dimensions that define financial inclusion were identified as financial products, features of financial products, and delivery channels (Stein, 2010). Financial inclusion has been measured mainly with three dimensions, namely outreach, usage, and quality of financial services (Amidzic, Massara, and Mialou, 2014). Each indicator of financial inclusion measures a variety of standards in the financial sector. The outreach measures the geographic or demographic penetration such as the number of branches per 1000 square kilometers or 1000 adults, the usage measures the percentage of adults with at least one type of financial account, and the quality indicators may comprise financial literacy, disclosure requirements, dispute resolution, and the costs of usage. The main indicators of the financial inclusion identified by the different scholars were income group, age, gender, and education level (Allen et al., 2016; Demirguc-Kunt and Kalpper, 2012; Xiaoyan, 2019). Moreover, those are named as demand-side factors of financial inclusion.

The financial inclusion determinants identified by previous scholars can be named as owning a financial account in a financial institution and having savings and borrowings on a financial institution (Xiuhua and Jian, 2017). The usage dimensions have been measured with individuals owning a financial account, a savings account, or a loan from a financial institution. The literature on measuring financial inclusion shows a rapid increment in previous studies, measured using a proportion of adult population or households with a bank account (Sarma, 2015; Demirguc-Kunt and Kalpper, 2012).

The existing literature on financial inclusion has examined several themes of financial efficiency, sustainability, the mobile money system, and financial literacy (Heenkenda, 2014), promoting development (Sarma and Pais, 2011; Ghosh, 2013; Fadi et al., 2019; Arandara and Gunasekara, 2020), financial stability (Hannig and Jansen, 2010; Cull et al., 2012), economic growth (Kim et al., 2018), country-specific financial inclusion practices (Fungáčová and Weill, 2015), and financial innovation and technology (Donovan, 2012; Ozili, 2019). However, there is a lack of studies that examine the impact of individuals' socioeconomic characteristics on financial inclusion. The less availability of literature aiming towards finding a relationship between different individuals' socioeconomic characteristics on the financial inclusion indicators provides a need for analyzing this aspect.

As stated by previous scholars, the leading indicators of financial inclusion are a formal account, formal savings, formal borrowings, formal credits, and the usage of credit or debit card, ATM, or mobile payments (Demirguc-Kunt and Klapper, 2013; Arandara and Gunasekara, 2020; Allen et al., 2012). These scholars have mainly used the determinants of financial inclusion as ownership of an account, formal savings, and formal borrowings. The study further uses individuals' characteristics of gender, age, education, employment to investigate the relationship between impacts of individuals' attributes on financial inclusion in Sri Lanka because many previous scholars had used those variables for investigations. Most study findings revealed that women are less likely to be financially included by having a less formal account, formal credits, formal savings, and the use of digital services.

The study of Demirgüç-Kunt and Klapper, 2013 disclosed that income is one of the significant determinants of financial inclusion. Further, Allen et al., 2012 have realized that the individuals' characteristics will impact financial inclusion indicators of owning an account and having savings in a financial institution. The findings further revealed that income and education enhance the financial inclusion of a country. The study investigating the financial inclusion of China noted that income and education strengthen the level of financial inclusion, and men and older people have higher levels of financial inclusion (Fungacova and Weill, 2015).

Discussions in the above empirical findings emphasize a significant impact between individual characteristics of age, gender, education, income, and employment with the level of financial inclusion. However, due to the unavailability of significant findings in the research area, it does not seem easy to examine the exact relationships between variables. Thus, this study may argue that the financial inclusion of a country will be determined by several socioeconomic characteristics of age, gender, education, income, and employment. They have a significant relationship with the accessibility of financial services to the people who lived in that country. It can be further concluded that financial inclusion indicators highly influence individuals' social and economic characteristics. The study will address the existing gap within the study area due to limited available empirical findings in previous literature. Thus, the study used the Sri Lankan data for the identification of significant relationships among the variables.

Kelegama and Tilakaratna (2014) examined the financial inclusion, regulation, and education in Sri Lanka. Their findings disclosed that Sri Lanka has the highest access to financial services compared to the other South Asian countries. The findings further indicate that the financial sector in Sri Lanka consisted of a large volume of financial institutions that provide a wide range of financial services such as loans, savings, leasing, etc. In Sri Lanka, people have the highest access to financial institutions for loans and savings. However, there is only limited access to ATM facilities and mobile banking (Kelegama and Tilakaratna, 2014).

One study which focuses on financial inclusion in Sri Lanka, which recognizes financial literacy to improve financial inclusion in Sri Lanka, is by Heenkenda (2014). The findings of this study showed that individual characteristics such as education, gender, and income level of Sri Lankans are the determinants of the financial inclusion of a person who lives in Sri Lanka.

As per the above discussed empirical findings and previous literature, the study's conceptual framework was developed to conceptualize the independent variables against the dependent variable. The independent variables are individuals' social and economic characteristics (age, gender, education, income, employment), while the dependent variable is financial inclusion (formal account, formal savings, formal borrowings, and use of digital services).

## **Research Methodology**

This section presents the research design of the study. This empirical study used data in the Global Findex Database and the study focused on the impact of individuals' characteristics

on financial inclusion in Sri Lanka. The study could further be classified as an explanatory study as it determines the impact of individuals' characteristics of age, gender, education, income, and employment on financial inclusion indicators of formal account, formal savings, formal borrowings, and the use of digital services. The unit of analysis is an individual person in Sri Lanka. The study used 1104 data available in the Global Findex Database 2017. The variable financial inclusion was set as an interpreted variable, named  $Y_i$ . The influencing factors on the level of financial inclusion were set as the explanatory variables named  $X_i$ . The influencing factors have been classified into the main five variables, i.e., gender, age, education, income, and education. The dependent variable of financial inclusion is indicated in four primary indicators of formal account, formal savings, formal borrowing, and use of digital services. The variables used in the study have been defined, as shown in Table 1 for data analysis.

**Table 1:**  
**Measurement of variables used in the study**

Variable	Definition
<b><i>Dependent Variable</i></b>	
Formal Account	1 if has an account at a financial institution, 0 otherwise
Formal Savings	1 if saved in the past 12 months, using an account at a financial institution; 0 otherwise
Formal Borrowings	1 if borrowed in the past 12 months from a financial institution, 0 otherwise
Use of Digital Services	1 if use digital service, 0 otherwise
<b><i>Independent Variables</i></b>	
Age	Age in number of years
Age <sup>2</sup>	Square age in number of years
Gender	1 if female, 0 otherwise
Primary Education	1 if primary education, 0 otherwise
Secondary Education	1 if secondary education, 0 otherwise
Tertiary Education	1 if tertiary education, 0 otherwise
Income-poorest 20%	1 if income is in the first income quintile, 0 otherwise
Income-second 20%	1 if income is in the second income quintile, 0 otherwise
Income-third 20%	1 if income is in the third income quintile, 0 otherwise
Income-fourth 20%	1 if income is in the fourth income quintile, 0 otherwise
Income-fifth 20%	1 if income is in the fifth income quintile, 0 otherwise
Employment	1 if employed, 0 otherwise

### **Economic Model Specification**

Logistic regression is commonly used to model the outcome of a categorical dependent variable. The Logistic regression model is a nonlinear model used whenever the dependent variable of the research study in a binary response variable can only proceed one out of two

possible outcomes. To have an account, save, borrow from the financial institute, and use digital service, the potential response is either have access or otherwise. Thus, a binary logistic model was chosen as it is considered the most appropriate and straightforward empirical model in this analysis. The logistic model concept is based on Bernoulli and binomial distribution (Adem et al., 2012), which estimates the probability of the dependent variable to be one. In this probability, some events may happen. The Bernoulli distribution can be summarized in terms of econometric model specification, considering the outcome variable () of this analysis. In Bernoulli distribution, there is a response variable with only two results. In this analysis, it is necessary to determine whether a person is financially included or not.

This analysis focuses on the impact of individuals' characteristics on financial inclusion in Sri Lanka. Here, the possible outcome is whether the person is financially included or not. The Logistic empirical results provide the odds ratio, which helps identify the direction between the outcome variable and explanatory variables. The Goodness-of-fit statistics of the empirical logistic regression were assessed by employing different statistics and tests such as the Likelihood ratio test, Pseudo-R<sup>2</sup>s, and Hosmer and Lemeshow goodness-of-fit test.

## **Data Analysis and Discussion**

The empirical results on the impact of each individual's characteristics on financial inclusion indicators in Sri Lanka have been analyzed using the logistic regression model. Thus, the data analysis initially presents the descriptive statistics of the sample, and then the impact of each individual's characteristics of age, gender, education, income, and education on financial inclusion indicators (formal account, formal savings, formal borrowings, digital services).

### **Descriptive Statistics**

The individuals' socioeconomic characteristics and financial inclusion indicators of the sample were examined using the descriptive analysis method. The analysis revealed the descriptive statistics of independent variables of gender, age, age<sup>2</sup>, education, income, and employment and the dependent variable of financial inclusion, which indicates formal account, formal saving, formal borrowing, and the use of digital services related to Sri Lanka.

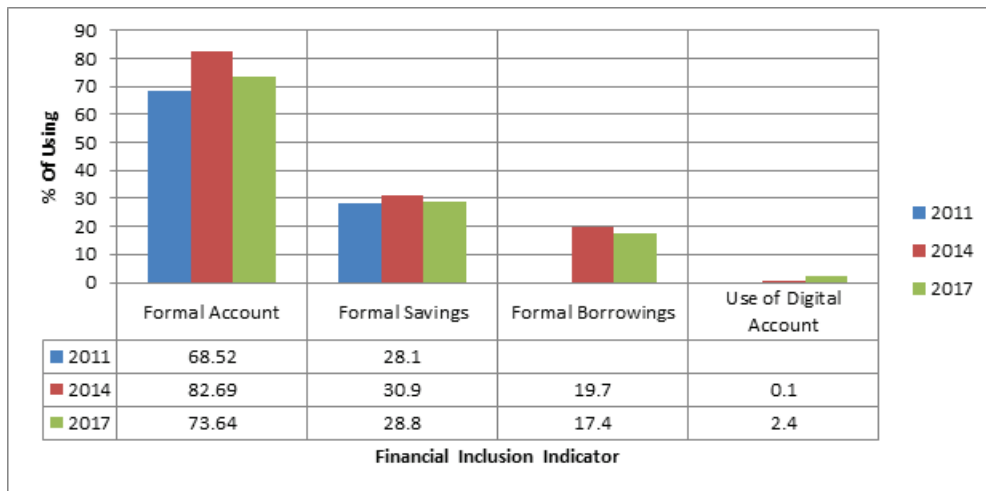
The individual characteristics of the respondents, as per the Global Findex Database, indicates that respondents in the data set consists of 62% females with 43 years of mean age. Thirty-three percent of respondents have primary education, and 62 percent have secondary education, while only 06 percent had tertiary education. The income quintiles of the people in the database are divided as 17, 18, 19, 22, and 24 percent from the poorest to richest 20%, respectively. Forty-eight percent of the respondents in the database have been employed. The descriptive statistics of the financial inclusion indicators of formal account, formal saving, formal borrowing, and use of digital services indicate how much (percent of) people in Sri Lanka have been financially included. The results revealed that 80% of the database have a formal account



in a financial institution, and 48 and 40 percent of respondents have savings and borrowings in a financial institution. In contrast, 39 percent of respondents in the database uses digital services. Table 2 presents these descriptive statistics.

The World Bank data evaluated on the account denotes the percentage of respondents reported having an account (by themselves or together with someone else) at a bank or another type of financial institution or personally using a mobile money service in the past 12 months (% age 15+), savings in the past year (% age 15+), borrowed from a financial institution, used a credit card (% age 15+) and having a mobile money account (% age 15+). The ownership of formal accounts, formal savings, formal borrowings, and use of a digital account by the population can be summarized for Sri Lanka for 2011, 2014, and 2017 as in Figure 1.

**Figure 1:**  
**Ownership of the formal account, savings, borrowings, and use of digital service**

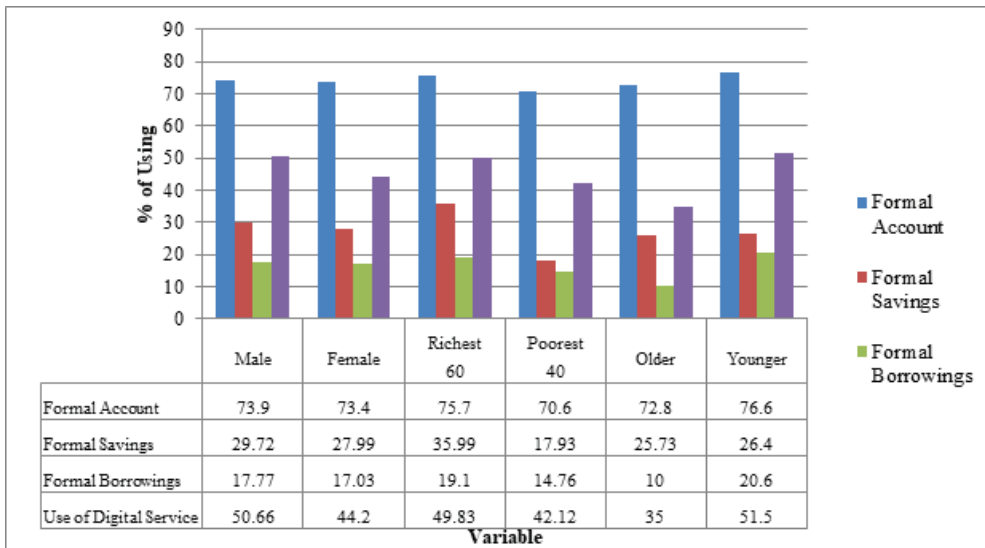


Source: World Bank Data, 2017

The World Bank data can be further evaluated using each individual's characteristics of age, gender, income, education, and employment separately. The data can be compared to each individual's characteristics of the respondents on the formal account, formal saving, and formal borrowings, as shown in Figure 2.



**Figure 2:**  
**Comparison of Individuals' Characteristics with Financial Inclusion Indicators**



Source: World Bank Data, 2017

Figure 2 illustrated that account ownership at a financial institution or with a mobile money service provider, saved in a financial institution, borrowed from a financial institution, and made payments using mobile phone or internet with regards to the characteristics of the female, male, richest 60 percent, poorest 40 percent (% of population ages 15+), and % of the population aged 35-59, and population age of 60+. The results emphasize that the lowest values are shown by the formal borrowings, and the highest percentage values indicated by the formal accounts. The figure emphasized that Sri Lankan people are financially included mainly by having a financial account in a financial institution.

### Estimation of Results

The binary logistic model was performed to examine the individual characteristics of age, gender, education, income, and employment on the financial inclusion indicators (formal account, formal saving, formal borrowing, use of digital services) in Sri Lanka. Before conducting the binary logistic analysis, the multicollinearity between independent variables of the model has been verified to avoid the uncertainty of the results by using linear regression analysis (Leech et al., 2015). Table 3 shows the collinearity statistics (VIF, Tolerance value) of the independent variables of this study. The collinearity statistics of value of variance inflated factor (VIF) is less than 3 for all independent variables except the variable of age. The values of tolerance of the independent variables are less than 1, which further illustrates that no multicollinearity problem exists among the independent variables of the models.

Table 2 indicates the results obtained from the logistic regression analysis of individuals' characteristics and financial inclusion indicators. As shown in the results of logistic regression analysis, the overall percentage of four baseline models is accurate as it predicted correctly with the percentages of 80.4%, 64.7%, 62.5%, 70.6%, and were statistically significant ( $p < 0.000$ ). The results of all four models Omnibus test evaluated that empirical models are statistically significant ( $p < 0.000$ ). In these models,  $p$  values of the Hosmer and Lemeshow goodness-of-fit test chi-square values and  $p$ -values are greater than 0.05 ( $p > 0.05$ ). Thus, it emphasized that empirical models have consisted of a good fit.

As shown in the results, gender has a negative significant impact on the use of digital services at a 10% significant level but has no significant impact on formal account, formal saving, and formal borrowing. It can further illustrate that females are less likely to use digital services in Sri Lanka, while other financial inclusion indicators show an insignificant relationship with gender.

The predictor variable *age* has a negative significant relationship with formal borrowing and use of digital services, while formal accounts and formal savings were not statistically significant. The results investigating the impact of age and  $age^2$  towards financial inclusion show a mixed relationship both positively and negatively. It emphasized that younger people are more likely to be financially included with more use of digital services and formal borrowings as per the age variable. In contrast, the formal account and formal saving show an insignificant relationship.

The study used three levels of *education*, i.e., primary, secondary, and tertiary education. The models themselves have omitted the tertiary education due to the redundancies, and investigations use primary and secondary education as education components. The results revealed that education has a significant positive relationship with a formal account, formal saving, and use of digital service, while not statistically significant with formal borrowing in Sri Lanka. It can be further evaluated that more educated people are more likely to be financially included with having an account in a financial institution, having savings, and more use of digital services.

The fourth individual characteristic use in the model was *income*. The income was divided into five quintiles, from the poorest to the richest. However, the model uses only the first four income levels to investigate the relationship between income and financial inclusion indicators. The results indicated that variable income has mixed results with both significant and insignificant relationships with financial inclusion indicators. The findings emphasized that the poorest have a negative relationship with all financial inclusion indicators, but only the formal borrowings show a statistically significant negative relationship. Also, the fourth income quintile has a positive relationship with all four financial inclusion indicators. The results suggested that the highest income people are more likely to have formal savings and use of digital services with the positive significant values within the coefficients. It can be further emphasized that the poorest are less financially included with negative relationships, and the richest people are more financially included with positive relationships in Sri Lanka.

**Table 2:**  
**The Results of Multiple Logistic Regression Models**

Variable	Model 1	Model 2	Model 3	Model 4
	Formal Account	Formal Saving	Formal Borrowing	Use of Digital Service
Gender	.237	-.074	-.169	-.290*
Age	.018	.016	.137***	.059**
Age <sup>2</sup>	.000	.000	-.002***	-.001***
Primary Education	.871***	.702***	.084	.892***
Secondary Education	3.064**	.956**	.403	2.351***
Poorest 20%	-.281	-.014	-.412*	-.072
Second 20%	-.587**	.220	-.207	.253
Middle 20%	.121	.352*	-.257	.538**
Fourth 20%	.325	.913***	.027	.651**
Employment	1.057***	.683***	.504***	.421**
Observation	1092	1092	1092	1092
Log Likelihood	958.380	1398.849	1362.560	1245.079
Hosmer and Lemeshow test	3.261 .917	8.901 .351	5.270 .728	13.001 .112
Pseudo R <sup>2</sup>	.113-.179	.099-.132	.094-.127	.176-.239
Omnibus Test	130.606 .000	113.507 .000	107.460 .000	211.937 .000
Categorical variable	80.4%	64.7%	62.5%	70.6%

Source: Authors' calculation from research data

Notes: significance levels at 1%, 5%, and 10% \*\*\*, \*\* and \* respectively

Source: Authors' calculation from research data

Notes: significance levels at 1%, 5%, and 10% \*\*\*, \*\* and \* respectively

Previous scholars have paid little attention to the variable *employment* as the predictor variable of financial inclusion. Thus, this study attempted to investigate the relationship between employment and financial inclusion indicators. The results revealed that employment has a statistically significant positive relationship with all four financial inclusion indicators of formal account, formal savings, formal borrowings, and the use of digital services. This allows concluding that employed people are more likely to be financially included with having account savings, borrowings, and more use of digital services in Sri Lanka.

In general, the study emphasized that individuals' characteristics of gender, age, education, income, and employment are highly correlated with financial inclusion indicators of formal account, formal savings, formal borrowings, and use of digital services in Sri Lanka. The study findings permit to conclude that younger employed males with higher education and higher

income levels are more likely to be financially included in Sri Lanka. These results are consistent to some extent when compared to other countries around the globe. The studies of Xiaoyan (2019), Allen et al. (2016), Fungacova and Weill (2015), and Demirguc-Kunt and Kalpper (2012) based on other countries shows some similarities compared to Sri Lanka.

## **Conclusion**

This investigation examines the impact of individuals' socioeconomic characteristics on financial inclusion in Sri Lanka. The study was based on the Global Findex Database 2017, and the sample consisted of 1092 data after removing the missing values and outliers from the database. The logistic regression analysis was performed using SPSS for data analysis, which investigated the significant impact of individuals' characteristics on determinants of financial inclusion of formal account, formal saving, formal borrowing, and use of digital service in Sri Lanka.

The logistic regression results for all four models revealed that individuals' characteristics of gender, age, education, income, and employment significantly impact financial inclusion.

The financial inclusion indicators of formal account, formal saving, formal borrowing, and use of digital service use four models to examine the financial inclusion in Sri Lanka. The study shows both statistically significant and insignificant relationships among the individuals' characteristics and determinants of financial inclusion. Generally, as a conclusion of all four model results, it revealed that the younger employed males with higher education and higher income level are more likely to be financially included in Sri Lanka.

The study findings show that males, higher income, higher education levels, and employment are more financially included compared to the older people, females, poor, less educated, and unemployed in the country. Thus, the government of Sri Lanka should support the less financially included people to be more financially included to achieve benefits from financial inclusion.

This survey primarily used the Global Findex Database in 2017. The researcher could use surveys and interviews to investigate the relationship using respondents in all Sri Lanka provinces to investigate relationships by using a primary data source and identifying themes in financial inclusion. Since 2017 data are not consistent with the present situation, the study may have more validation using the questionnaire in the year 2020. It is also necessary to conduct a study that focuses on how to be more financially included, as the present study has used only subjective quantitative methodology to investigate the relationship between individuals' characteristics and financial inclusion in Sri Lanka.

## **References**

Adem, T. A., Ember, C. R., Skoggard, I., Jones, E. C., & Faas, A. J. (2012). Dangerous Geography: Spatial Distribution of Livestock Raiding in Northwestern Kenya, *Ethnology*, 51 (1), pp. 1–29.

- Allen, F., Demirguc-Kunt, A., Klapper, L., & Martinez Peria, M. S. (2016). The Foundations of Financial Inclusion: Understanding Ownership and Use of Formal Accounts, *Journal of Financial Intermediation*, 27, pp. 1-3.
- Allen, Franklin & Demirguc-Kunt, Asli & Klapper, Leora & Martinez Peria, Maria. (2012). The Foundations of Financial Inclusion: Understanding Ownership and Use of Formal Accounts. *Journal of Financial Intermediation*. 27. 10.1016/j.jfi.2015.12.003.
- Amidžić, G., Massara, A., & Mialou, A. (2014). Assessing Countries' Financial Inclusion Standing – A New Composite Index, IMF Working Papers 14/36. Washington, DC: International Monetary Fund.
- CBSL (2015). Annual Report 2014. Central Bank of Sri Lanka. Colombo.
- Central bank of Sri Lanka (2019). Roadmap for Sustainable Finance in Sri Lanka.
- CGAP (2014). Financial Inclusion. Washington, DC: Consultative Group to Assist the Poor. Available at: <http://www.cgap.org/topics/financial-inclusion>
- Cull, R., Demirgüç-Kunt, A., & Lyman, T. (2012). Financial inclusion and stability: What does research show? Consultative Group to Assist the Poor, 71305, 1-3
- Demirgüç-Kunt, A., & Klapper, L. (2012). Financial inclusion in Africa: an overview. The World Bank, Policy Research Working Paper No. 6088, pp. 1-18.
- Demirguc-Kunt, A., Klapper, L., & Singer, D. (2017). Financial inclusion and inclusive growth: A review of recent empirical evidence. The World Bank, Policy Research Working Paper, No 8040, pp. 1-25.
- Demirguc-Kunt, Asli & Klapper, Leora. (2013). Measuring Financial Inclusion: Explaining Variation in Use of Financial Services across and within Countries. *Brookings Papers on Economic Activity*. 2013. 279-340. 10.1353/eca.2013.0002.
- Donovan, K. (2012). Mobile money for financial inclusion. *Information and Communications for development*, 61(1), 61-73.
- Fadi Shihadeh, Sisira Kumara Naradda Gamage & Azzam (M. T) Hannon (2019). The causal relationship between SME sustainability and banks' risk, *Economic Research Ekonomiska Istraživanja*, 32:1, pp.2743-2760, DOI: 10.1080/1331677X.2019.1655465
- Fungáčová, Z., & Weill, L. (2015). Understanding financial inclusion in China, *China Economic Review*, 34, pp. 196-206.
- Gamage, S.K.N.; Kuruppuge, R.H.; Nedelea, A.M. (2016). Socio-economic determinants of well-being of urban households: A case of Sri Lanka. *USV Ann. Econ. Public Admin.* 2016, 16, pp. 26–35.
- Gamage S. K. N, Lin, L., Haq, I. (2016). Economic and demographic characteristics, social capital, and demand for life insurance: Evidence from Central Region of Sri Lanka. *Ecoforum*, 5, 2(9), pp. 74-82
- Ghosh, J. (2013). Microfinance and the challenge of financial inclusion for development. *Cambridge journal of economics*, 37(6), 1203-1219
- Hannig, A., & Jansen, S. (2010). Financial inclusion and financial stability: Current policy issues. *Asian Development Bank Institute Working Paper*, No. 259, 1-29.
- Ihtisham ul Haq, Mohammed Saud M. Alotaish, Naradda Gamage Sisira Kumara, and Shavkat Otamurodov, (2014). Revisiting the Romer's Hypothesis: Time Series Evidence from Small Open Economy, *Pakistan Journal of Applied Economics*, 24, (1), pp. 1-15

- Heenkenda, Shirantha (2014): Inequalities in the Financial Inclusion in Sri Lanka: An Assessment of the Functional Financial Literacy. Published in: *Ilorin Journal of Economic Policy* , Vol. 1, No. 1 (2014): pp. 1-30
- Kelegama, S., & Tilakaratna, G. (2014). Financial Inclusion, Regulation, and Education in Sri Lanka, ADBI Working Paper 504. Tokyo: Asian Development Bank Institute. Available at: <http://www.adbi.org/working-paper/2014/11/18/6506>
- Kim, D. W., Yu, J. S., & Hassan, M. K. (2018). Financial inclusion and economic growth in OIC countries, *Research in International Business and Finance*, 43, pp. 1-14.
- Kuruppuge, R. H., Gamage, S. K. N., and Nedelea, A. M. (2017). Credit cards as a determinant of social capital: A study of rational behaviour of urbanised consumers. *Ecoforum*, 6(1).
- Leech, Nancy & Barrett, Karen & Morgan, George. (2015). *SPSS for Intermediate Statistics: Use and Interpretation*, Fifth Edition.
- Neaime, S., & Gaysset, I. (2018). Financial inclusion and stability in MENA: Evidence from poverty and inequality, *Finance Research Letters*, 24, pp. 230-237.
- Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability, *Borsa Istanbul Review*, 18(4), pp. 329-340.
- Ozili, P. K. (2019). Blockchain Finance: Questions Regulators Ask. *Disruptive Innovation in Business and Finance in the Digital World*, *International Finance Review*, 20, Emerald Publishing Limited, pp. 123-129.
- Sarma, M. (2015), "Measuring financial inclusion", *Economics Bulletin*, Vol. 35 No. 1, pp. 604-611.
- Sarma, M., & Pais, J. (2011). Financial inclusion and development. *Journal of international development*, 23(5), pp. 613-628.
- Stein, P. (2010). Inclusive Finance. Paper presented at Korea–World Bank High-Level Conference on Post-Crisis Growth and Development, held in Busan, Republic of Korea, 3–4 June 2010.
- Tilakaratna, G. (2012). Dimensions and dynamics of clientship in the microfinance sector: Evidence from Sri Lanka, Ph.D. Thesis, University of Manchester, UK.
- Tilakaratna, G. (2016). Financial Inclusion in Sri Lanka: Current Status and Issues. *Financial Inclusion in Asia*, Palgrave, Studies in Impact Finance, 187-208, DOI 10.1057/978-1-137-58337-6\_6
- World Bank (2015). *The little data book on financial inclusion*, Washington, DC: World Bank.
- World Bank (2017) *Global Findex Database 2017: Measuring financial Inclusion and the Fintech Revolution*, Washington, DC 20433: World Bank.
- Xiaoyan Xu, (2019). *Trust and Financial Inclusion: A Cross-country Study*, *Finance Research Letters*, doi: <https://doi.org/10.1016/j.frl.2019.101310>
- Xiuhua, W., & Jian, G. (2017). Financial inclusion: measurement, spatial effects, and influencing factors, *Applied Economics*, 49:18, 1751-1762, DOI: 10.1080/00036846.2016.1226488