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Influence of Socio-economic and Demographics factors on Households' Savings in Sri Lanka

Ruwan Jayathilaka[I], Thisum Palihawadana[I], Inuri Amalka[I], Sandupama Jayasinghe[I]and Pulith Jayarathne[I]

[I] SLIIT Business School, Sri Lanka Institute of Information Technology, Sri Lanka

Abstract

The purpose of this paper is to examine the factors influencing saving behavior among households in a developing country. Sri Lanka being a developing country, has recorded a relatively lower households' saving rate when compared with its peer regional counterparts. The study approximates the socio-economic and demographic factors towards the level of saving of households in Sri Lanka using a quantile regression approach based on the Household Income and Expenditure Survey, conducted by the Department of Census and Statistics of Sri Lanka. Results were obtained by using the stepwise quantile regression technique. The findings of this study conclude that when Sri Lankan households have a higher per-capita income, they tend to have a higher saving level. Moreover, age and marital status have a significant impact on the level of saving in Sri Lankan households. Additionally, poverty and employment status have a significant impact to the level of saving on Sri Lankan households. This research paper bridges empirical gaps in this area of study. Furthermore, this study has been conducted encompassing the entire country rather than limiting it to a district or segment, hence, is comprehensive. As per the generated results gender, income and education levels have shown a significant positive impact towards the level of saving, whilst marital status and poverty have shown a significant negative impact towards the level of saving. It is considered that when the demographic and socio-economic factors are affecting favorably, the level of saving tends to increase and vice versa. Accordingly, findings of the study can provide insights to policymakers to devise policies and

Corresponding Author:
Ruwan Jayathilaka, Sri Lanka Institute of Information Technology, Sri Lanka. E-mail: ruwan.j@sliit.lk

incentives to encourage savings behaviour and level of savings among households in Sri Lanka. This is beneficial as coping strategies specially during crises, where dependency of households on government assisted welfare schemes is likely to be less.

Keywords: *Household Saving Behaviour, Motives of Savings, Barriers to Saving, Quantile Regression*

Introduction

In the global context, savings can be considered as an essential element in financial behavior, which provides an individual with psychological security and boosts their overall sense of wellbeing. It is seldom a conventional topic in social work. Financial functioning of individuals and households plays a vital role in wellbeing. Saving money is essential as it helps to protect households in a financial emergency. Moreover, saving money can help households to pay for large acquisitions, avoid debt, reduce financial stress and provide them with a greater sense of financial freedom. The household saving can be considered as the portion of disposable income which is kept aside without spending on consumption but accumulated or invested in different sources. Likewise, savings can be broadly defined as: "Saving is a flow variable and refers to the accumulation of assets and debts over a specific period. Savings is a stock variable and refers to the net worth of a person's assets at a moment in time. The saving ratio expresses the part of income that is saved during a period and gives a relative measure of saving" (Nyhus, 2018). This conveys the tendency of an individual to save since it explains which portion of an individual's income is set aside. Furthermore, household saving is the foremost domestic source of funds deployed to finance capital investments, a major influence for long term economic growth. The total amount of net savings as a percentage of net household disposable income can be considered as the net household saving rate.

Even though saving is an adaptive strategy or behaviour, many individuals do not possess the required knowledge, or they do not tend to save money. Therefore, inadequate amount of savings cannot uplift the living standards of households. The World Bank statistics show that developing countries such as Thailand and Bangladesh, have recorded Gross Savings of $171.08bn and $107.92bn respectively, whereas Sri Lanka has recorded around $24.4bn (The World Bank, 2019). In many instances it has been proved that saving money is

important. The latest example is the outbreak of the coronavirus (COVID-19) pandemic in early 2020, which has interrupted daily activities of economies, organizations, and households. Since many countries have imposed lockdown mechanisms to curb the spread of the virus, companies have started to downsize, and cutting down on wages, and work contracts have been dried up (The World Bank, 2019). Income sources of households are disturbed, and this has created a hectic situation. Generally, financial advisors recommend households to set aside three to six months' worth of living expenses in order to be used in a precautionary situation (Elkins, 2020). This justifies the importance of saving, as many households struggle to fulfill their basic needs, especially the households who earn daily wages and are severely hit by the crisis.

Sri Lankan household saving ratio is linked to the ratio of household income saved to household net disposable income at a given period of time. The factors affecting savings behaviour, saving motives, and impact of socio-economic and demographic factors will be discussed in detail to investigate the saving behaviour among Sri Lankan households. Furthermore, the Gross Domestic Savings in Sri Lanka as a percentage of GDP from 2010 to 2019 has been fluctuating in the range of 15.2% to 27.2%. The household saving rate has decreased from 21.3% in 2019 to the forecast value of 20% in 2020 (Trading Economics, 2020). In the above circumstances, a research gap can be noted in the Sri Lankan setting. Therefore, there is a significant need to discuss household saving behaviour and socio-economic and demographic characteristics that affect the savings among households in Sri Lanka.

Objective

The objective of this study is to identify the influence of socio-economic and demographic factors towards the level of saving in Sri Lankan households.

Significance of the Study

This research differs from existing studies in some ways. First, savings among households is a pressuring issue in the country. Over the years, an ordinary household needs to save for precautionary situations due to various reasons such as to consume after retirement, to spend on higher education, to purchase assets, and to settle huge bills. Therefore, it is essential to save as households. Second, research studies in the Sri Lankan context conducted to date were confined to district-wise or province-wise. This study is the first attempt carried out at a broad level, based on the Household Income and Expenditure Survey (HIES) survey data that represent the entire country. Thus, this study will be useful to

understand findings that are unique to the local context. Thirdly, the HIES carried out by the Department of Census and Statistics (DCS) of Sri Lanka has recorded an average household income of Sri Lankan Rupees (SLRs) 62,237 per month whereas SLRs. 43,511 was the median household income per month in the year 2016. The Sri Lankan saving ratio is linked to the ratio of household income saved to household net disposable income at a given time. Hence, findings of this research can provide valuable insights to the Government of Sri Lanka for planning welfare provisioning and social policies as an essential part of its fiscal management. Therefore, factors affecting savings behavior, saving motives and the impact of socio-economic and demographic factors will be discussed in detail to investigate the saving behaviour among Sri Lankan households. Finally, these findings will be helpful especially for the banking and financial services sector as well as policymakers who aim to revive the economy in COVID-19, the global pandemic which occurred in late 2019.

The remaining sections of this paper are organised as follows. Section 2 describes literature review with previous studies highlighting significance of this study, while Section 3 presents data and the methodology. Section 4 describes empirical results and the discussion and finally Section 5 presents the conclusion with policy implications.

Literature Review

A comparative study on household behavior carried out in India and China stated that in order to understand household saving behavior among developing countries, the life-cycle hypothesis is found to be useful. Here, income growth and age dependency showed a positive effect and a negative effect respectively. Therefore, reasons are valid to consider the demographic structure as a key determinant in household saving behavior (Ang, 2009). Chamon & Prasad (2010) also carried out a study on rising saving behavior rates in China. The study has been based on data from the annual urban household surveys conducted by China's National Bureau of Statistical which asserted that households headed or controlled by young and old households (25-69 age group) have the highest saving rates. On the contrary, it was also found that some researchers have stated that age has a negative effect on household saving (Ozcan et al., 2003). Finally, a study conducted in the local context has also confirmed that age of households is not a significant determinant of savings. Abundant literature and evidence prove that age does not affect household savings.

When a male individual is considered, it is expected for them to save more before their retirement given that, that person is in the labor market for a short period of time (Yamada et al., 1992). Female households are negatively associated with saving, since results show a significant negative impact between saving and gender. It was also indicated that female households are not good at saving compared to male households According to a study conducted by Mori, (2019) in Tanzania, females prefer informal sources to save in line with the perception that formal sources are for the high-income category.

The present study takes into account the variable, martial status of households. Grinstein-Weiss et al. (2006) discovered that marital status has an influence on household savings, but married households tend to save more. Another study carried out by Jianakoplos et al., (1996) stated that married households save significantly higher than single, divorced or widowed households who are estimated to accumulate 16% of target wealth than the others listed above. Marital status of a household as a variable for the saving behavior has a negative effect. Households that are widowed, separated or polygamous are found to save less than household heads who have never married. This can be further explained based on married households in Nigeria who try to meet the daily consumption needs rather than saving (Nwosu et al., 2019). Kumarasinghe & Jayasinghe, (2016) confirm that gender and marital status are significant determinants of savings.

The findings supported the fact that household saving rates tend to be higher for households with higher education, more workers, better health and more assets (Lugauer et al., 2019). On the contrary, when household education level is considered, households with decision makers with no schooling background have the highest saving rate which is 27.7% whereas, households with decision makers with primary education, secondary education and post-secondary education show a saving rate of 17%, 15.5% and 14% respectively (Poon and Hon, 2015). The study carried out by Jayasinghe et al. (2016) explored that a lower level of education and less awareness on the benefits of savings are found among most of the households in this district; analysis found out that lack of education and confidence have a significant influence on the level of saving.

Precautionary saving appears to be significant since it increases the income variable which leads to considerably more savings (Jianakoplos et al., 1996). Income level is considered to have a significantly positive impact on the level of saving rates in Turkey and growth rate of income is not statistically significant (Ozcan et al., 2003). Low-income consumers are more likely to save for daily expenses, while the middle-income group prefers saving for emergency

expenses (Mauldin et al., 2016). Additionally, in the local context it was found that there is a negative stimulus on the awareness of financial products and a positive value on differentiation of income sources (Heenkkenda, 2014).

For self-employed workers, the income variability is likely to be greater. It is found that there is a positive and statistically significant relationship with household saving, and level of income varies with the households where more than one person is working/employed (Jianakoplos et al., 1996). A long-term reduction of unemployment and the necessity on unemployment, disable households, sole parents' payments could increase the nation's saving rate since the income of the households are being raised (Harris et al., 2002). However, in the local context, government and business sector employees have recorded a positive and statistically significant value with household saving (Heenkkenda, 2014).

The urban household saving rates in China has risen while rapid income growth and prospects of sustained high-income growth have been approximately 7 per cent during the period from 1995–2005 (Chamon & Prasad, 2010). Results of another study supported the fact that in the urban sector, propensity to save is substantially higher than in the rural sector. This points out to the role of income redistribution between the said sectors (Gupta, 1974). Finally, in the local context, it was identified that there is a positive impact on saving among both rural and urban sectors. These two sectors possessed the highest knowledge on household saving than the households who live in the estate sector in the country (Heenkkenda, 2014).

Moav and Neeman (2012a) concluded that the rate of saving increases with income, in particular, that the poor's savings rate is very low, the reason being that the poor fail to save and spend their income on festivals and tobacco. The generated results of the study support the fact that household's level of poverty has a positive impact on household level of saving. A study carried out in India stated that 2.22% reduction in rural poverty has increased the share of savings by 1% in the years 1997 to 2010 (Karlan et al., 2014). Another study pointed out that households who live in poverty face many difficulties which have intensified over the past years due to a relatively higher number of households who do not save money. Although these low-income households tend to save, they have to set aside money to build better living standards for their families (Halpern-Meekin et al., 2015). In the local context, Colombage (2012) discovered that the majority of households were poor, below the poverty line and also possess a low financial literacy compared to other households above the poverty line. It is likely that these households find it difficult to access

financial services in the country. Therefore, household savings of these households tend to be lower than that of other households.

As per the above, surveys carried out in the savings field stated that there are significant factors affecting savings behaviour. Therefore, literature of shortlisted in the study reflects the influence and behaviour of various socio-economic and demographic characteristics of savings. When focusing more on practical implications of the current society regarding the factors which will affect the level of savings, it is necessary to investigate how socio-economic and demographic factors influence the level of saving.

Table 1 represents all the variables that were used by previous researchers in order to measure the level of savings.

Table1: Common Variables Used to Measure Level of Savings

Variable	Research Paper
Age	(Ang, 2009) (Chamon & Prasad, 2010) (Ozcan et al. 2003) (Kumarasinghe and Jayasinghe, 2016)
Gender	(Yamada et al. 1992) (Mori, 2019)
Marital Status	(Grinstein-Weiss et al., 2006) (Jianakoplos et al., 1996) (Nwosu et al., 2019) (Kumarasinghe & Jayasinghe, 2016)
Employment	(Jianakoplos et al., 1996) (Harris et al., 2002) (Heenkkenda, 2014)
Income Level	(Ozcan et al., 2003) (Jianakoplos et al., 1996) (Heenkkenda, 2014)
Level of Education	(Lugauer et al., 2019) (Poon & Hon, 2015) (Jayasinghe et al., 2016)
Geographical Location	(Chamon & Prasad, 2010) (Gupta, 1974) (Heenkkenda 2014)
Poverty Level	(Moav & Neeman, 2012a) (Karlan et al. 2014) (Halpern-Meekin et al., 2015) (Colombage, 2012)

Methods

Conceptual Framework

The following conceptual framework was inspired and developed based on a study carried out by Garcia et al. (2011). Figure 1 illustrates, the conceptual framework developed which contains two independent and dependent variables

such as demographic characteristics and socio-economic factors, and level of saving respectively. The researchers were able to identify four demographic characteristics and five socio-economic factors that affect the saving behaviour of households with the help of the literature review. As the final objective, the impact of socio-economic and demographic characteristics towards the level of saving of households will be identified.

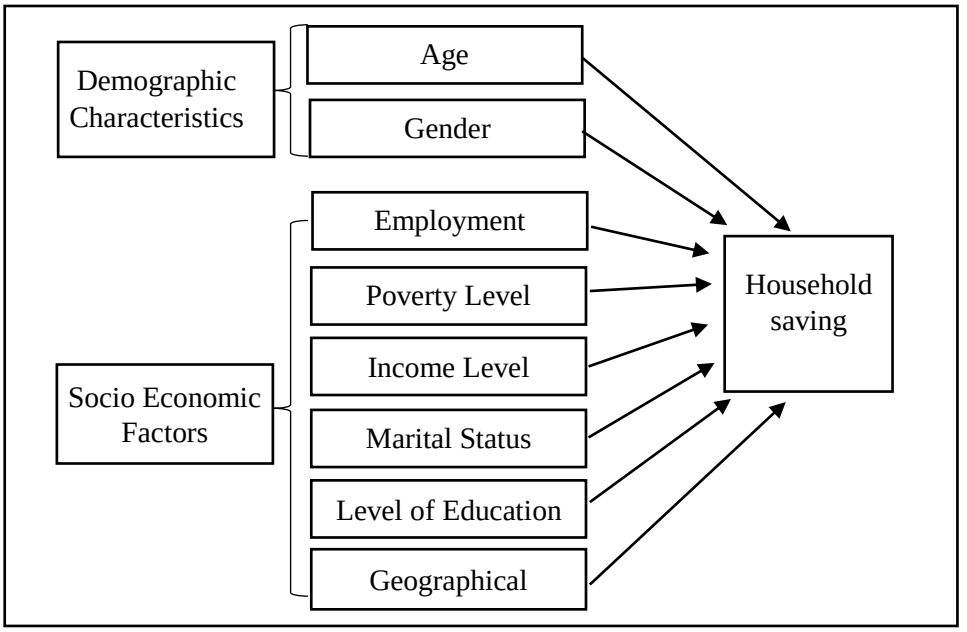

Figure 1: Conceptualization Framework
Source: Based on Garcia et al. (2011)

Data

The current study is aimed at finding the influence of socio-economic and demographic characteristics on the level of households' saving in the Sri Lankan context. This study is handling quantitative data compiled from secondary information sources. Since 1980, the DCS in Sri Lanka have been gathering data through the HIES to assess living conditions of Sri Lankan households. This study focuses on the latest HIES conducted in 2016. The sample comprises of 25,640 household units including responded households of 21,756. According to data that contribute to the HIES 2016, the survey captures the most significant socio-economic information to adopt for financial improvements, socio-economic approaches, and related plans.

Data analytical tool

Data collected by the HIES 2016 has been analyzed under the quantile regression method. The concept of quantile regression was essentially instituted in the late '70s. Ordinary sample quantile in the location model has neutrally combined with the learner model and it has generated a new statistical term regression quantile (Koenker and Bassett 1978). In this study, the most basic function of quantile regression has been unveiled.

$$Y_i = x_i\beta_q + e_i \quad \text{(1)}$$

Instead of having one coefficient beta, this function has sets of coefficient data that is beta "q" where it is associated with the q's quantile of the dependent variable.

Furthermore, it's necessary to utilise quantile regression in this study since the study has a well-distributed population among the whole county. The quantile regression has similar model setups for household saving function under cluster and individual data. Specifically, data with regard to household characteristics and backgrounds enable to investigate the household's optimization impact in detail from a quantile regression (Chen et al., 2007).

$$S_i = x_i'\beta + \varepsilon_{i'}\ i = 1,2,\dots n, \quad \text{(2)}$$

where:

X is a vector of covariates,

β is the vector of parameters and ε is the error.

The vector X accommodates the influence of household savings with income, household expenditure, and other socio-economic and demographic factors relevant in the household's decision. The decision as to which independent variable to espouse is supported by an empirical classification and exploratory analysis. Table 2 shows the possible independent variables that could affect the level of saving among Sri Lankan households, including socio-economic, demographic, and geographic location of the households. The stepwise quantile regression technique was selected to evaluate whether there is a significant difference between the explanatory variables and the level of saving among Sri Lankan households.

Table 2: Variable Definitions for the Household Dataset

Variable	Description	Expected Sign
Level of saving	10 saving deciles	
Income	The monthly per-capita income of the household heads (SLRs. '000)	(+)
Age	Age of the household heads (in years.)	(-)
Gender	1 if male: 0 if female	(+)
Marital Status	Separate dummy variables for never married, married, widowed, divorced; Divorced is the reference category	(-/+)
Education	Separate dummy variables for no schooling, primary, secondary, tertiary, special education; Special education is the reference category	(+)
Geographical Location (Sector)	Separate dummy variables for Urban, Rural, Estate; Estate is the reference category	
Geographical Location (District)	Separate dummy variables for Colombo, Gampaha, Kaluthara, Kandy, Matale, Nuwara Eliya, Galle, Matara, Hambantota, Jaffna, Mannar, Vavuniya, Mullaitivu, Kilinochchi, Batticaloa, Ampara, Trincomalee, Kurunegala, Puttalam, Anuradhapura, Polonnaruwa, Badulla, Monaragala, Rathnapura, Kegalle. Mullaitivu is the reference category	(-/+)
Poverty	1 if poor: 0 if non-poor; Poverty line adopted by DCS to measure poverty in Sri Lanka. (The current value of OPL is Rs. 4,166 per person per month for 2016)	(-)
Employment Status	Separate dummy variables for government sector employee, semi-government sector employee, private sector employee, employer, own-account worker, unpaid family worker;	(-/+)

Results and Discussion

Quantile Regression of Households' Per Capita Savings

This study presents empirical findings on the influence of socio-economic and demographic factors towards the level of savings among households in Sri

Lanka by utilizing the Ordinary Least Square (OLS) and quantile regression methods. The basic characteristics of each independent variable are presented in Appendix 1. Regarding the consideration of socio-economic and demographic factors of households in Sri Lanka, an average of 74.41% are male-headed households and 25.86% are controlled by female-headed households. The average age of a household head is 53 years and 77.63% of household heads tend to be married. The majority of household heads has completed their education in Sri Lanka to the secondary stage, and, as a percentage, it stands at 71%. Additionally, the highest number of households located in the rural area of Sri Lanka is approximately 79.95%. In Sri Lanka, the majority of the household heads are employed in the private sector which is 30.26% following the lowest recording from the employer category unpaid family worker with 0.47%.

The initial quantile regression was estimated by utilizing all explanatory variables and results are shown in Appendix 2. Finalizing the variables for the stepwise quantile regression technique was adopted with a coefficient above 0.10 and some of the already selected variables were removed when evaluating the final stepwise quantile regression model. i.e. variables such as Buddhist and Burgher.

In Table 3, the study has reported the result for the whole sample of household units in Sri Lanka by applying the stepwise quantile regression. The OLS results are presented in the column labeled "OLS" and quintiles regression results have been classified into nine quantiles which have labelled as Q1 for q= 0.1, Q2 for q=0.2, etc.

The figures of quantile regression results estimators for some covariates and especially for household saving often deviate significantly from the corresponding OLS regression estimator. This again specifies that utilizing the quantile regression is more adequate for this study than the OLS regression methods.

Income of Households' Savings

In Table 3, the first line is represented by household per-capita income which tends to be the most important factor affecting household saving. By investigating the results, the scholars have established that across the quantiles of per-capita income the effect has become stronger over the quantiles, i.e. in quantile one (Q1) the households who have a lower income tend to save SLRs. 6.42. Nevertheless, when the income is expanding households tend to save more, i.e. in the ninth quantile (Q9) households tend to save SLRs. 817.53 as

indicated by the past researchers' Current household income tends to have a positive impact on household saving. Specifically, an increase in household income can lead to an increase in household savings (Hua & Erreygers, 2019). When considering with the past researchers, it can be said that the study's generated results support the fact that household income has an impact on household saving and also the household saving rate in Sri Lanka.

Age of Households' Savings

The age variable results in Table 3 contain a significant difference when it approaches OLS and quantile results itself. The impact of age on household-level of saving among the quantiles has decreased. Furthermore, the estimated coefficient demonstrates that the age of households has a statistically larger, negative contribution on the highest quantile of households' per capita savings. According to the study carried out by Kumarasinghe and Jayasinghe (2016), it was found that age dependency is not a significant determinant of the households' saving. However, that particular study was limited to the Colombo district only; on the contrary this study reflects a holistic view about the entire country and thereby, identified that age has a negative impact on households' savings.

Gender of Households's Savings

When considering the gender of the household head on household saving, there is a significant difference between OLS results and other quantile results which revealed that the fourth quantile has a negative impact compared to the third quantile, while all the eight quantiles recorded a positive impact on households' savings (refer Table 3). Therefore, it can be said that gender of household head has a significant positive impact on households' saving. A study conducted in Tanzania stated that gender of the household head has a significant negative impact towards households' saving (Mori, 2019). Nevertheless, the per capita income of Tanzania in the year 2016 was around $ 2,500 whilst, Sri Lanka recorded a per capita income of $ 12,000. Therefore, when comparing these two economies the Tanzanian economy can be considered as one of the world's poorest economies.

Marital Status of Households' Savings

According to the results of Table 3, the generated coefficients of the marital status categories, the results revealed that married, widowed and separated marital status categories have a statistically significant larger negative contribution on the highest quantile of household per capita saving, than the

lowest and median quantile which are 606.62, 681.68 and 1,036.27. The relationship tends to have a decreasing manner from Q1 quantile to Q9 quantile in separated household heads respectively Another study supported the fact that, marital status of a household as a variable for the saving behavior has a negative effect. Households that are widowed, separated or polygamous are found to save less than household heads who have never married (Nwosu et al., 2019). Therefore, when the marital status of the household head is considered, it can be said that this study and the study conducted by the past researchers are on par with one another.

Education of Households' Savings

The impact of the education of the household head on household saving is complex. The primary education results tend to have fewer amounts of savings rather than secondary and tertiary education levels. Furthermore, the results indicate the gap comparing levels of education and in some quantile this gap is insignificant (Refer Table 3). Additionally, no schooling tends to have no results among the eight quantiles which conclude that there is no significant difference and there is no significant impact from no schooling to the level of saving of households in Sri Lanka. However, there is a significant positive impact among the household heads that have completed up to primary, secondary and tertiary education. Xiao and Fan (2002) concluded that households with higher educational backgrounds tend to save more for retirement, purchases, asset growth, and children. Hence it is evident that results related to education variable of this study are on par with the results of the past researchers and thereby the education level of the household head has a significant positive impact on the households' savings.

Geographical Location of Households' Savings

When considering the estimated coefficient of the geographical location, sector wise generated results revealed that the urban sector has a statistically significant negative contribution on the median quantile to highest quantile of household per capita saving which are SLRs -483.78, SLRs 521.85, SLRs -521.80, SLRs -442.32 and SLRs -557.46 respectively. Moreover, generated results in Table 3 revealed that the urban sector has a statistically significant positive contribution on the quantile one to quantile four which was SLRs 356.06, SLRs 266.79, SLRs 372.94 and SLRs 408.75 respectively. By referring to Table 3 the gap of urban and rural households' impact on the level of saving is comprehensible. According to past literature, it is evident that rural

households have higher saving rates than urban households. Thus, it can be concluded that urban and rural households have a statistically significant impact towards level of saving (Pan, 2016).

Coefficient demonstrates that among the 25 districts, 17 districts represent an insignificant relationship towards the per capita savings. However, Polonnaruwa, Badulla and Moneragala represent a statistically larger negative contribution among the lowest to the highest quantile of household per capita saving. The coefficient of other districts revealed that there is a statistically larger negative contribution to each quantile of household per capita savings. Matale district tends to record the highest saving value as SLRs. 965.68 and the lowest saving was recorded from Colombo as SLRs. -3246.61. Even though the results obtained for urban and rural sectors showed a positive impact on households' savings and on the contrary when the districts of the country were taken into consideration the results showed a different picture, as the population was scattered among the 25 districts. Consequently, when the districts of the country were analyzed, it revealed that there is an insignificant relationship towards households' savings.

Poverty Level of Households' Savings

Furthermore, in Table 3 the estimated coefficient of households 'poverty level has a statistically larger negative contribution for each quantile. As per the generated results, the larger contribution on the lowest quantile of household per capita saving was SLRs.3750.56 whereas the highest quantile of household per capita saving was SLRs.2512.22. As per the evidence of Moav and Neeman (2012b) it was concluded that the poor fail to save, since they spend their income on expenses such as festivals and tobacco. The generated results of the study and the results of past researchers support the fact that households' level of poverty has a negative impact on households' level of saving.

Employment Status of Households' Savings

When considering the estimated coefficient of the five categories of employment status, results of Table 3 revealed that the government sector and semi-government sector employment categories have a statistically proven positive contribution to the lowest quantile of the households' per capita saving than the median and highest quantile of the households' per capita saving. Furthermore, the estimated coefficient of the private sector employment category also shows a statistically larger positive contribution to the lowest

quantile which was SLRs.3314.59 compared to the median and highest quantile which was SLRs.1361.55 and SLRs.447.65 respectively. Results of employment status illustrate that the employer category has recorded a statistically larger negative contribution to the lowest quantile which was SLRs.8291.55 compared to the highest quantile which was SLRs.1334.54. According to the studies conducted by Jianakoplos et al. (1996) those self-employed workers' income variability is likely to be greater, thus there is a positive and statistically significant relationship with household saving. Finally, it is evident that the household heads who are employed have a significant positive impact towards the level of savings.

In accordance with the above findings and studies carried out relevant to the savings field, it is evident that above-mentioned demographic and socio-economic factors affect the level of saving positively as well as negatively. As per the generated results gender, income and education levels have shown a significant positive impact towards the level of saving, whilst marital status and poverty have shown a significant negative impact towards the level of saving. It is considered that when the demographic and socio-economic factors are affecting favourably, the level of saving tends to increase and vice versa.

Table 3: Stepwise Quantile Regression Estimation Results for Household Dataset, Sri Lanka

	OLS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Per capita income	512.7***	6.4	175.1***	277.6***	375.9***	475.9***	564.0***	638.4***	720.6***	817.5***
	(4.17)	(3.92)	(2.55)	(1.87)	(1.59)	(1.45)	(1.38)	(1.67)	(1.40)	(1.63)
Age	31.7***	37.6***	31.7***	24.7***	18.6***	17.9***	12.6***	9.62***	6.66***	3.44*
	(7.57)	(7.01)	(4.56)	(3.37)	(2.96)	(2.71)	(2.46)	(2.73)	(2.03)	(1.89)
Gender	-569.0**	-789.6***	-687.9***	-469.7***	-502.3***	-417.5***	-238.0***	-285.1***	-234.0***	-180.1***
	(277.81)	(262.44)	(168.37)	(124.22)	(106.44)	(98.49)	(88.01)	(98.81)	(70.60)	(65.65)
Marital Status	1169.7***	1279.3***	727.5**	553.0**	569.7***	606.6***	665.8***	574.8***	423.8***	489.7***
Married	(542.19)	483.298	(329.78)	(244.98)	(211.07)	(187.60)	(166.99)	(192.35)	(142.26)	(131.54)
Widowed	1246.33**	994.00*	804.97**	581.60**	765.79**	681.68**	660.64**	670.98**	512.67**	583.50**
	(581.19)	(515.82)	(350.16)	(260.92)	(225.88)	(201.23)	(179.46)	(206.99)	(153.80)	(142.54)
Separated	1707.33**	1617.96**	1130.88**	901.32**	1055.01***	1036.27***	985.64**	939.95**	759.81**	736.19**
	(751.74)	(667.70)	(455.41)	(338.59)	(292.17)	(260.42)	(231.65)	(266.13)	(197.36)	(181.67)
Education										
No Schooling				-3,277.6						
				(2,133.)						
Primary	-962.9*	-991.1**	-542.9*	-3849.7*	-491.6**	-455.7**	-570.4***	-537.8***	-443.9***	-295.5**
	(514.34)	(454.99)	(310.38)	(2,123.8)	(199.79)	(177.88)	(158.75)	(182.51)	(135.79)	(125.36)
Secondary	-2754.48***	-2061.54***	-1294.37***	-4648.16**	-1257.16***	-1177.64***	-1294.52***	-1216.94***	-1068.49***	-790.99***
	(503.19)	(440.23)	(301.18)	(2,122.217)	(195.10)	(174.10)	(155.63)	(179.66)	(134.36)	(124.74)
Tertiary	-9516.42	-7394.53	-4592.83	-8004.05	-5174.21	-5119.95	-4960.34	-4689.73	-4284.35	-3672.62

	OLS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
	***	***	***	***	***	***	***	***	***	***
	(737.87)	(659.45)	(447.88)	(2,135.85)	(288.42)	(257.88)	(230.49)	(265.19)	(200.15)	(188.91)
Geographical Location										
Sector	-799.31***					-483.78***	521.85***	-521.50***	-442.32***	-557.46***
Urban	(293.09)					(101.41)	(91.24)	(105.74)	(78.49)	(72.06)
Rural		356.06	266.79*	372.94***	408.75***					
		(220.18)	(151.91)	(114.04)	(100.17)					
Districts	-4148.19***	-2771.85***	-2200.72***	-2730.36***	-2522.91***	-3058.71***	-3246.61***	-3118.37***	-3117.01***	-2439.16***
Colombo	(398.44)	(323.14)	(226.65)	(166.22)	(151.07)	(145.90)	(151.51)	(155.67)	(121.73)	(108.41)
Gampaha	-2079.93***	-1236.52***	-462.51**	-1194.08***	-1160.98***	-1528.45***	-2005.98***	-1898.39***	-1828.71***	-1471.64***
	(362.19)	(310.09)	(218.09)	(155.41)	(139.61)	(131.91)	(138.64)	(139.92)	(109.29)	(97.60)
Kaluthara	-2699.25***	-2054.64***	-1066.01***	-1467.60***	-1173.09***	-1568.35***	-1529.25***	-1378.50***	-1395.21***	-905.16***
	(430.32)	(370.60)	(258.87)	(187.10)	(166.019)	(153.96)	(155.49)	(161.80)	(124.49)	(112.09)
Kandy	-2162.27***	-1362.36***		-1000.36***	-695.27***	-1231.48***	-1176.94***	-1066.97***	-1035.02***	-787.53***
	(406.84)	(350.30)		(176.22)	(157.24)	(146.14)	(149.38)	(153.59)	(118.47)	(106.17)
Matale		965.6**	782.3**			-723.7***	-931.9***	-751.9***	-600.1***	-637.1***
		(482.11)	(333.09)			(194.40)	(187.94)	(202.06)	(152.78)	(138.95)
Nuwara Eliya	-832.12*			-737.91***	-451.07**	-1247.19***	-1316.06***	-1138.16***	-1086.54***	-771.57***

	OLS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
	(495.60)			(221.17)	(196.22)	(175.41)	(172.31)	(182.61)	(139.16)	(124.92)
Galle	-1219.51***	-740.76**	-734.56***	-1282.54***	-822.39***	-1036.35***	-1212.94***	-957.33***	-1125.27***	-796.43***
	(414.25)	(358.52)	(249.62)	(179.39)	(159.83)	(148.73)	(151.35)	(156.50)	(120.43)	(107.83)
Matara	-884.83**		431.05*			-617.29***	-740.18***	-651.96***	-697.36***	-572.78***
	(429.89)		(259.53)			(153.73)	(155.16)	(160.87)	(123.62)	(110.44)
Hambantota	-2337.81***	-1360***	-970.43***	-1613.35***	-889.26***	-1469.02***	-1636.02***	-1483.57***	-1399.66***	-1177.73***
	(498.96)	(435.40)	(302.34)	(218.80)	(193.28)	(176.72)	(173.71)	(184.52)	(140.34)	(125.6975)
Jaffna		-718.29				-355.75*	-606.94***	-485.96**	-386.84***	-331.93**
		(464.64)				(188.69)	(183.15)	(196.26)	(149.15)	(134.56)
Mannar		-2451.19***	-1237.72***	-1565.94***	-1267.35***	-1623.71***	-1791.38***	-1459.73***	-1305.33***	-838.71***
		(651.93)	(450.62)	(332.28)	(289.31)	(261.37)	(243.92)	(269.04)	(202.69)	(184.64)
Vavuniya						-873.30***	-1117.50***	-1019.43***	-1217.44***	-1195.04***
						(255.19)	(238.85)	(263.24)	(198.15)	(181.22)
Kilinochchi	1002.26		808.63*							
	(728.01)		(436.89)							
Batticaloa	1669.86***	725.64	935.39***		355.83*		-286.91		-331.99**	
	(529.47)	(461.89)	(318.56)		(205.49)		(181.58)		(147.33)	
Ampara				-829.25***	-482.78**	-932.50***	-1259.84***	-1035.78***	-1041.87***	-877.99***

	OLS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
				(223.58)	(197.48)	(180.31)	(176.56)	(187.32)	(143.01)	(128.71)
Trincomalee	894.81		874.74*		489.4**					
	(620.21)		(375.66)		(240.73)					
Kurunegala	-2535.27***	-1577.43***	-555.23**	-1162.04***	-841.01***	-1199.05***	-1238.23***	-1029.35***	-985.72***	-782.02***
	(382.79)	(329.24)	(231.03)	(164.73)	(147.42)	(137.66)	(142.76)	(145.40)	(112.80)	(100.75)
Puttalam	-2046.32***	-1588.85***	-1633.59***	-1728.47***	-1299.69***	-1688.96***	-1640.25***	-1472.25***	-1583.97***	-998.12***
	(518.83)	(452.75)	(314.38)	(228.42)	(201.13)	(183.56)	(179.21)	(191.34)	(145.31)	(131.31)
Anuradhapura		609.26	783.48***			-431.19**	-948.62***	-918.24***	-944.05***	-783.16***
		(434.63)	(302.90)			(177.25)	(173.92)	(184.86)	(140.88)	(127.51)
Polonnaruwa	1049.8*		724.2**		435.6*		-367.0 *	-329.45	-355.3**	-359.6**
	(578.79)		(351.60)		(224.40)		(195.43)	(211.47)	(159.93)	(145.37)
Badulla	697.39		702.1**		439.5**		-225.95			
	(508.96)		(307.27)		(197.46)		(175.99)			
Monaragala	1548.49***	1795.25***	1597.48***	760.95***	699.80***					
	(587.46)	(515.29)	(354.91)	(259.16)	(227.53)					
Rathnapura		759.48**	869.31***		378.60**	-213.51	-393.40**	-270.40	-399.11***	-381.73***
		(384.09)	(268.86)		(172.41)	(158.64)	(158.87)	(165.53)	(127.11)	113.42270
Kegalle	-1201.13**			-664.62***		-9879.60***	-1008.64***	-970.37***	-1065.29***	-782.48***
	(475.03)			(207.58)		(168.74)	(166.93)	(175.88)	(134.54)	(121.01)
Poverty										
Poor	4439.31	3750.56	3419.12	3221.75	3209.63	3120.60	2967.76	2794.18	2699.92	2512.22

	OLS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
	***	***	***	***	***	***	***	***	***	***
	(499.85)	(430.10)	(297.23)	(221.17)	(192.74)	(172.74)	(155.04)	(179.24)	(133.66)	(125.38)
Employment Status		2374.81***	1244.34***	977.62***	712.26***	566.78***	199.22		-375.31***	-475.87***
Government sector employee		(372.08)	(229.45)	(170.98)	(147.61)	(140.72)	(127.77)		(99.34)	(91.65)
Semi government employee		1472.20***	1288.41***	830.18***	381.05		-373.29*	-520.43**	-601.72***	-602.60***
		(565.13)	(371.60)	(277.73)	(239.71)		(196.73)	(221.34)	(161.63)	(149.88)
Private sector employee	1860.37***	3314.59***	2593.69***	2033.27***	1549.54***	1361.55***	1132.98***	918.06***	683.16***	447.65***
	(243.09)	(250.02)	(133.14)	(98.71)	(85.05)	(91.95)	(85.26)	(88.81)	(57.67)	(53.52)
Employer	-3125.84***	-8291.55***	-2701.17***	-2136.86***	-2050.97***	-1600.51***	-1585.72***	-1685.22***	-1542.69***	-1334.54***
	(638.77)	(581.10)	(382.95)	(284.04)	(245.43)	(224.90)	(201.47)	(227.46)	(165.96)	(154.21)
Own account worker	486.5**	-416.46*				134.51	115.43	122.73		
	(235.48)	(238.75)				(88.03)	(81.22)	(85.41)		
Unpaid family worker									711.2**	
									(338.40)	
Pseudo R^2		0.0460	0.0541	0.0879	0.1345	0.1965	0.2731	0.3638	0.4743	0.6225
R^2	0.4198									

Note: * p<0.1; ** p<0.05; *** p<0.01; Standard errors in parenthesis.
Source: Authors 'calculation based on the DCS (2016)

Conclusion and Policy Implications

This research paper investigated the influences of socio-economic and demographic factors towards the level of saving of households in Sri Lanka based on data of the HIES 2016. To achieve research objectives of the study, authors applied quantile regression as an alternative for OLS regression for

analysis of data. Most importantly, results of quantiles have a significant difference from the OLS regression. The main findings of the study by utilizing OLS and quantile regression can be concluded as follows.

Results of quantile regression illustrate that households with higher per-capita income tend to save higher than households with lower per-capita income. This concludes that when per-capita income gets higher, the saving too will be higher among Sri Lankan households. Policy implications can be recommended through the Government of Sri Lanka collaborating with financial sector institutions. The policymakers can draw policies targeting those who are in lower quantiles to offer them attractive saving rates compared to rates offered to people who are in higher quantiles. By revising the saving rate applicable for the lower quantile, people will save more and people who already save will experience a less effect because this does not concern their quantile. Furthermore, more tax-supported saving plans can be introduced to increase the saving behaviour of the poor people.

The policymakers can pay attention to how the marital status has affected household savings in Sri Lanka. The separated households tend to save more than the married households exhibiting a social issue in Sri Lanka in the year 2016. On the other hand, it is useful to explore the composition of expenses of married households and investigate what expenses account for a larger share of the total income, root causes etc. Moreover, the policymakers can look beyond traditional savings instruments and programmes such as new financial services, investments etc., with flexible conditions and attractive returns on savings, to boost the urban households. Moreover, the government can increase the awareness of school children in order to nurture a positive attitude towards savings at the earliest age.

It can be recommended that people from self-employment categories need to be provided with a wide range of facilities, as their level of savings seems to fluctuate with their income levels, exploring how people of different household levels perceive the risk aspect when saving is useful. Employment variable does not capture migratory workers, a segment which makes a significant contribution to the local economy, whose remittances to their home country (Sri Lanka) can positively impact towards the level of saving among households.

This study includes several limitations as well. Limitations of secondary data in the HIES 2016, hindered researchers of this study from broadening the findings.

A further study can use panel data that would enable researchers to examine more accurate inference of the model parameter with greater capacity.

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The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

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Appendix 1: Characteristics of Sri Lankan Households in 2016

	Analytical Sample (N=21,756)	
Variable	**% (Mean if numerical)**	**Std. deviation**
Income[a]	16.39	22.60
Age[a]	52.63	14.05
Gender		
Male[b]	74.14%	
Female[b]	25.86%	
Marital Status		
Never married[b]	2.22%	
Married[b]	77.63%	
Widowed[b]	16.80%	
Divorced[b]	0.65%	
Separated[b]	2.70%	
Education		
No Schooling[b]	3.42%	
Primary[b]	22.81%	
Secondary[b]	70.80%	

Variable	Analytical Sample (N=21,756) % (Mean if numerical)	Std. deviation
Tertiary[b]	2.93%	
Special Education[b]	0.03%	
Geographical Location		
Sector		
Urban[b]	15.76%	
Rural[b]	79.95%	
Estate[b]	4.29%	
Districts		
Colombo[b]	9.13%	
Gampaha[b]	8.34%	
Kaluthara[b]	5.26%	
Kandy[b]	6.04%	
Matale[b]	2.91%	
Nuwara Eliya[b]	3.74%	
Galle[b]	5.76%	
Matara[b]	5.24%	
Hambantota[b]	3.67%	
Jaffna[b]	3.16%	
Mannar[b]	1.50%	
Vavuniya[b]	1.58%	
Mullaitivu[b]	1.37%	
Kilinochchi[b]	1.60%	
Batticaloa[b]	3.23%	
Ampara[b]	3.52%	
Trincomalee[b]	2.24%	
Kurunegala[b]	7.11%	
Puttalam[b]	3.35%	
Anuradhapura[b]	3.64%	
Polonnaruwa[b]	2.62%	
Badulla[b]	3.50%	
Monaragala[b]	2.54%	
Rathnapura[b]	4.79%	
Kegalle[b]	4.14%	
Poverty Status		
Poor[b]	3.36%	
Non-poor[b]	96.64%	
Employment Status		
Government sector employee[b]	6.91%	
Semi government employee[b]	2.21%	
Private sector employee[b]	30.26%	
Employer[b]	2.11%	
Own account worker[b]	28.33%	
Unpaid family worker[b]	0.47%	

Source: Author's calculation based on the (DCS 2016)

Notes: [a] Based on all households that reported every explanatory variable.
[b] Binary variable.

Appendix 2: Initial Quantile Regression estimation results for household data set, Sri Lanka

	OLS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Per capita income	512.92 (4.19)	8.08* (4.17)	175.18 (2.75)	276.70 (2.02)	377.31 (1.76)	475.29 (1.59)	563.88 (1.41)	637.98 (1.58)	720.79 (1.50)	817.95 (1.621 1)
Age	32.090 (7.99)	39.62* (7.52)	31.46* (5.20)	26.20* (3.87)	19.41* (3.43)	16.71* (3.02)	12.73* (2.52)	10.23* (2.69)	7.296* (2.25)	4.45** (1.92)
Gender	- (288.5	- (279.2	- (192.62	- (141.8	- (125.1	- (109.2	- (90.23)	- (96.23	- (80.37)	- (69.08)
Marital										
Never married	- (1,248.	- (1,144.	-498.62 (811.00	345.49 (603.2	349.78 (535.0	-0.03 (471.6	-225.53 (392.91	-15.39 (417.0	-360.6 (350.16	- (300.9
Married	33.39 (1,110.	1,136. (1,013.	219.35 (722.87	838.23 (537.2	833.89 (475.8	605.97 (419.4	444.25 (349.31	567.26 (370.9	232.09 (311.39	310.24 (268.1
Widowed	122.63 (1,122.	873.24 (1,024.	317.08 (727.58	898.63 (541.3	1007.3 (480.5	697.52 (423.8	438.06 (353.09	654.46 (374.9	311.4 (315.20	396.84 (270.3
Divorced	- -	- -	- -	- -	- -					
Separated	580.36 (1,221.	1,571. (1,122.	665.54 (794.33	1222.8 (590.1	1315.9 (523.5	1025.7 (461.5	758.12 (384.23	942.62 (408.1	562.54 (342.30	584.16 (292.8
Education										
No Schooling	- (4,955.	- (1,522.	- (2,807.	- (2,298.	- (1,921.	- (1,732.	- (1,409.	- (1,590.	-980.28 (1,212.	-435 (391.3
Primary	- (4,935.	- (1,463.	- (2,792.	- (2,287.	- (1,911.	- (1731.	- (1,402.	- (1,583.	- (1,205.	- (375.7
Secondary	- (4,932.	- (1,456.	- (2,790.	- (2,286.	- (1,910.	- (1,742.	- (1,402.	- (1,583.	- (1,205.	- (373.4
Tertiary	- (4,960.	- (1,539.	- (2,809.	- (2,301.	- (1,924.	- (1,740.	- (1,411.	- (1,593.	- (1,215.	- (394.7
Geographical Sector										
Urban	- -	325.08 (523.8	323.61 (365.33	84.54 (274.9	-63.63 (246.8	- (219.0	-469** (183.45	- (196.8	- (166.86	- (144.6
Rural	782.69 (295.9	616.92 (459.1	512.93 (319.89	439.06 (241.6	351.58 (217.6	95.73 (193.7	52.03 (162.54	44.88 (174.3	20.26 (147.94	- (127.5
Estate	1012.5 (578.7	- -	- -	- -	- -					
Districts										
Colombo	- (846.7	- 787.47	- (548.12	- (408.5	- (362.2	- (320.3	- (267.08	- (285.1	- (239.25	- (204.6
Gampaha	- (820.4 6)	- (762.3 3)	-490.40 (534.10)	- (397.4 3)	- (351.5 8)	- (310.4 2)	- (258.49)	- (275.2 7)	- (230.77)	- (197.7 5)
Kaluthara	- (851.3	- (795.6	- (554.31	- (412.4	- (364.9	- (322.1	- (268.23	- (285.3	- (239.13	- (204.6
Kandy	- (841.0	- (786.3	-249.35 (547.34	- (407.1	- (360.4	- (318.2	- (265.00	- (282.0	- (236.52	- (202.2
Matale	- (918.5	1,309. (8,860.	729.42 (597.82	363.36 (444.6	- (393.6	- (347.4	- (289.47	- (308.0	- (258.02	- (220.2

	OLS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Nuwara Eliya	- (920.3	563.00 (852.6	142.44 (591.62	- (442.2	- (393.3	- (348.3	- (290.55	- (309.7	- (260.30	- (223.4
Galle	- (843.8	- (790.6	-736.45 (549.38	- (408.6	- (361.6	- (319.3	- (265.89	- (282.9	- (237.16	- (202.9
Matara	- (851.2	341.08 (796.3	390.63 (554.56	219.86 (412.4	- (364.9	- (322.1	- (268.09	- (285.1	- (238.80	- (203.8
Hambantota	- (887.5	- (830.7	- (576.91	- (429.5	- (380.4	- (335.7	- (279.78	- (297.7	- (249.36	- (213.6
Jaffna	- (907.5	- (848.6	268.32 (590.21	158.82 (439.4	-80.33 (389.2	- (343.1	- (285.77	- (303.9	- (254.61	- (217.1
Mannar	- (1,048.	- (980.7	- (682.03	- (506.7	- (449.0	- (396.5	- (330.26	- (351.5	- (294.18	- (251.5
Vavuniya	- (1,035.	353.24 (966.1	50.43 (673.55	- (500.7	- (444.0	- (391.6	- (326.24	- (346.9	- (290.71	- (249.2
Kilinochchi	667.76 (1,029.	1,117. (960.1	778.80 (666.90	566.25 (498.4	280.17 (441.6	-90.29 (389.1	44.55 (324.31	-25.75 (344.3	-109.63 (288.31	- (245.5
Batticaloa	1,300. (905.6	1,106. (851.8	868.39 590.67	654.03 (439.2	321.27 (388.6	- (342.6	-243.82 (285.07	- (302.9	-413.39 (253.42	- (216.3
Ampara	-73.76 (895.1	109.58 (838.9	-65.79 (582.91	- (433.6	- (383.7	- (338.7	- (281.97	- (299.7	- (251.24	- (214.1
Trincomale e	530.61 (960.9	1,013. (901.7	859.15 (626.27	731.09 (466.0	447.77 (412.2	62.18 (363.6	13.220 (302.66	86.94 (321.9	-51.49 (269.22	- (229.6
Kurunegala	- (827.0	- (774.3	-581.50 (537.84	- (400.2	- (354.3	- (312.9	- (260.61	- (277.4	- (232.56	- (199.0
Puttalam	- (898.0	- (841.9	- (584.47	- (434.5	- (385.3	- (339.8	- (283.23	- (301.3	- (252.37	- (215.8
Anuradhapura	- (887.5	1,030. (829.2	803.13 (577.25	516.25 (429.5	133.26 (380.2	- (335.7	- (279.74	- (297.8	- (249.61	- (213.9
Polonnaruwa	685.77 (933.7	819.46 (870.8	760.63 (608.02	629.91 (452.1	378.85 (400.2	-57.94 (353.3	-321.41 (294.28	- (313.1	- (262.30	- (224.4
Badulla	307.25 (898.0	800.64 (837.5	743.82 (582.60	434.50 (433.8	364.21 (384.5	104.65 (339.7	-165.57 (283.33	- (302.1	-204.1 (253.31	290.76 (217.0
Monaragala	1,224. (938.4	2234.3 (880.4	1,556.7 (611.10	1191.3 (454.4	631.25 (402.4	233.68 (355.1	162.90 (295.70	87.21 (314.4	-52.83 (263.34	- (225.3
Rathnapura	-30.57 (859.3	1,215. (804.8	856.65 (559.72	556.03 (416.5	321.92 (368.5	- (325.1	-329.13 (270.60	-302.9 (287.7	- (240.85	- (206.1
Kegalle	- (874.1	347.09 (819.1	51.77 (569.72	- (423.5	- (374.7	- (330.7	- (275.42	- (293.0	- (245.57	- (209.5
Poverty										
Poor	4420.2 (501.4	3731.2 (455.9	3422.5 (319.90	3233.6 (239.4	3184.8 (213.8	3118.4 (189.3	2959.4 (158.60	2812.4 (169.9	2711.3 (143.07	2,535. (123.2
Employment										
Governmen t sector	317.65 (416.1	2376.9 (396.4	1183.1 (272.62	981.49 (202.5	696.43 (179.5	556.14 (157.5	206.50 (131.03	45.85 (139.2	(358.08 (116.67	(395.4 (99.33)
Semi government	- (641.8	1458.2 (598.3	1306.7 (418.41	815.59 (311.2	294.01 (275.6	-11.62 (242.9	- (201.79	- (214.8	- (179.79	- (153.7
Private sector	1886.5 (278.5	3371.9 (266.3	2564.9 (183.56	2060.7 (135.5	1557.4 (120.1	1350.6 (105.4	1144.6 (87.74)	951.96 (93.73	704.76 (78.44)	477.24 (67.22)
Employer	- (655.3	- (618.9	- (428.15	- (318.3	- (281.9	- (248.1	- (205.99	- (219.9	- (183.65	- (157.7
Own	522.02	-	-74.97	5.83	-17.47	115.30	124.27	146.77	30.86	61.60

	OLS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
account	(266.0	(254.5	(175.68	(129.4	(114.8	(100.7	(83.71)	(89.29	(74.82)	(63.66)
Unpaid	1,072.	985.93	623.38	393.28	187.65	433.77	253.12	407.85	723.52	173.74
family	(1,303.	(1,221.	(843.69	(627.7	(553.1	(491.3	(408.83	(434.5	(363.84	(312.4
Pseudo R^2		**0.0463**	**0.0542**	**0.0881**	**0.1346**	**0.1966**	**0.2732**	**0.3639**	**0.4743**	**0.6226**
R^2	**0.4200**									

Note: * p<0.1; ** p<0.05; *** p<0.01; Standard errors in parentheses.

Source: Authors 'calculation based on the (DCS 2016).