MAURITIUS RESEARCH COUNCIL

AN INVESTIGATION OF THE UNDERLYING CAUSES OF HOUSEHOLD INDEBTEDNESS: CASE STUDY OF MAURITIUS

Final Report

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FINAL REPORT

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An Investigation of the Underlying Causes of Household Indebtedness: Case Study of Mauritius

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ABSTRACT

The present study attempts to investigate various aspects of household over-indebtedness in Mauritius. The crux of this study is to engage in a preliminary investigation of the main causes of such a state and its likely implications at the household level. The research particularly examines the factors leading to such indebtedness. In addition to examining the socio economic effect of household indebtedness, the study also attempts initially to estimate the size of the average household indebtedness, with particular emphasis on recent trends in household debt and on the main providers of credit. Using survey methodologies, including descriptive, inferential and factor analysis, the authors found that a significant majority of the respondents (85.1%) are concerned about their current level of debts. Consistent with previous studies, factors that consistently trigger households into potential debt problems and increase the risk of over-indebtedness are found to be: the increase in cost of living, the rise in the price of real estate, financing education, persistent low income, inability of coping with expenses and obtaining debts on hire purchase. Overall, the consequences of high indebtedness was more inclined towards the adverse economic shocks that the country may face in terms of financial instability and families struggling to meet basic needs. Though the social impact was less likely recognised, to act immorally and commit fraud and corruption in the society, alcoholism, stress, and family breakdown were among the most elected consequences of the respondent. Possible suggestions to reduce and mitigate the risk of having excessive debts are related mainly with the provision with meaningful and appropriate information when taking loans and also greater awareness and institutional assistance and advices.

1. INTRODUCTION

According to the Bank of Mauritius (BOM) figures, the household debt for the first quarter of 2013 ratio stood at 19.5 % of the gross domestic product (GDP) compared to 19.2% for the four months of 2012 and 17.7% for the first quarter of 2012. Furthermore, according to the Association for the Protection of Abused Borrowers (APEA) in Mauritius, it is reported that three Mauritians households in four have difficulties to honour their debts and repay their credit and there is an estimated 10% more of households who can no longer pay the credits that they have accumulated. Debt levels are ever increasing in Mauritius and are a serious matter of concern for the government from both an economic and also sociological point of view.

Sociological aspects relate to i) court cases and psychological problems ii) domestic violence and marital breakdown iii) depression and other health consequences iv) lower work efficiency; and v) possible criminal acts amongst others while economic issues related to issues regarding i) Non performing loans of banks ii) Higher credit exposure iii) Effects on financial stability iv) Cost to the economy in terms of effects on GDP v) Productivity issues and vi) Effects on savings and its related issues among others.

It is against this backdrop that the present study attempts to investigate various aspects of household over-indebtedness, an increasingly worrying phenomenon in our society lately. Broadly speaking, the main causes of such a state and its likely implications at the household level are the crux of this research. This research thus particularly examines the factors leading to such indebtedness and these are numerous, ranging to overconsumption, peer influences, changing lifestyles, technology, fast food bias, employment problems, low savings rates among others. In addition to examining the socio economic effect of household indebtedness, the study also attempts initially to estimate the size of the average household indebtedness, with particular emphasis on recent trends in household debt and on the main providers of credit.

The study, we believe, comes at an opportune time since there is the widely held view, as lately propounded by civil society and the Bank of Mauritius that the Mauritian household is increasing over-indebted. Many Mauritians have already felt the full brunt of this phenomenon, and negative impact observed includes total loss of wealth, stress and family problems as well. The economy is also likely to be affected in many ways and so will the banks and other finance houses, institutions which are at the heart of economic stability. Such a research will permit the various stakeholders to gather some additional insights and analysis on the issue of over indebtedness and it is hoped that the results from this study will be timely and will serve to assist both the civil society and the policy makers in their decision making.

For the purpose of this study, a questionnaire has specifically been designed to provide a holistic picture of households' financial circumstances, possible causes and effect of indebtedness and possible remedies to attenuate this phenomenon. Given the technicality of the subject, two filter questions have been included at the start of the questionnaire to target people who feel concern about their current level of debts. The questionnaire asks both qualitative and quantitative questions, but the use of qualitative questions is limited to avoid disparity in the answers. Additionally, the survey represents both an individual and household dimension. Individual dimension covers questions on individual financial position, behaviour and financial knowledge. While, the household dimension gather details of the household structure, demographics, household-level finance. The targeted population for the purpose of this study includes Mauritian residents who have contacted a debt and who is a permanent of the homeland. As such this study adopts a stratified random sampling method to determine the number of respondents required from each district of Mauritius (also taking into account age, gender and income level). Thereafter, a convenience and random sampling is used to select the respondents from each region. To analyse the the survey data we make use of descriptive and inferential data analysis as well as simple regression techniques on selected elements.

The rest of the study is structured as follows: Section 2 dwells into both the theoretical literature and the empirical research, Section 3 provides a concise overview of Household Indebtedness in Mauritius, Section 4 discusses the methodology used and discusses the findings from the analysis and section 5 concludes.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Household Debt and Over-indebtedness

Generally debt refers "to an obligation or liability arising from borrowing money or taking goods or services on credit that is against an obligation to pay later" (Prinsloo, 2002). One is faced with a debt problem when individuals are "unable to pay their current credit repayments and other commitments without reducing other expenditure below normal minimum levels" (Citizens Advice, 2003). In the same line of study, the concept of "over-indebtedness" has accrued much interest over the years. There is no official definition of over-indebtedness; however, a more precise definition is described by Haas (2006), "A household is regarded to be over-indebted when its income, in spite of a reduction of the living standard, is insufficient to discharge all payment obligations over a longer period of time." Therefore in order to determine whether or not the level of debt of the household is excessive, it is necessary to assess at which point the household stands in its life cycle, its level of income and the composition of the household. These findings will be important to measure what would be a financially viable level of debt the household is able or unable to pay given its requirement to maintain a minimum living standard and also its future flow of resources.

The discussion in this section suggests that households accumulate and reduce debts over their life cycle. For many years, the field of theoretical and empirical research on household indebtedness has been dominated by two economic frameworks; mainly the Life-Cycle Hypothesis (LCH) (Modigliani & Brumberg, 1954) and the Permanent Income Hypothesis (Friedman, 1957). These two frameworks are discussed in the next section.

2.1.2 Life-Cycle Hypothesis and Permanent Income Hypothesis

The rationale behind the Life-Cycle Hypothesis (LCH) is that, households acquire large amount of debt to maximize their utility by smoothing consumption over their life cycle. The decision to borrow is generally dependent on households expected increased in future income. Individuals tend to experience a low income in their early working life and it tends to rise overtime. At start of their working life individuals would have a negative saving rate, but would experience an increase in debt. This is because they expect higher income in the future, thus they can afford to increase consumption by financing the purchase of asset through debt. However, as they grow older and have a sizable income, they will increase savings levels in preparation for their retirement while indebtedness will decrease. At the completion of their working lives, their consumption will mainly be financed by the yields of assets or contributions they have made during their working age and, in turn, labor income is no longer a sufficient source anymore (Modigliani, 1986).

The study also considers the Permanent Income Hypothesis (PIH) which was developed by the economist's Milton Friedman in 1957. Friedman emphasizes that consumption should not solely be dependent on current income. Consumers could have recourse to savings and borrowing in order to smooth consumption in times where income is subject to fluctuations. According to the PIH, a change in consumption is not likely to occur due to a transitory change in income, but rather due to a permanent income shock (Friedman, 1957; Ando and Modigliani, 1963).

Friedman's PIH complements the LCH of Modigliani (Meniago et al. 2013). In essence, the message conveyed by these two economic theories, is that, individuals behave ''rationally'' so as to maximize their expected utility based on time-consistent preferences and indebtedness, as well as savings, which guarantees an increased in welfare by smoothing out consumption over time (Bagliano & Bertola, 2004).

2.1.3 Determinants of Household Indebtedness: Based on the Life-Cycle (LC) and Permanent Income (PI) Models.

According to LC/PI Model, the level that households save or borrow in order to smooth consumption, is based on their expected lifetime resources, real interest rates and demographic factors such as age, gender, size of family. Based on Debelle (2004) study, the possible determinants that could increase household participation in the debt market are presented below.

Real Interest Rate: It is a known fact that changes in interest rate affect negatively consumption through various channels. On one hand, a fall in real interest rate encourages individuals to accumulate more debt because cost of servicing debt will be lower and decreases level of savings because future income will be lower. On the other hand, the fall in interest rate, lowers the return on savings, such that individuals will be faced with a lower consumption in the future. The sign of the net effect of interest rates is ambiguous, because the last effect can actually boost savings. Thus the effect cannot be deduced by theory alone.

Future Income: In addition, an increase in future income expectations drives desired consumption upwards, which will tend to boost borrowing.

Demographics: As explained earlier in the LC theory, an individual's income profile varies considerably with his/her age and level of education attainment. Hence, changes in demographics, such as shifts in age and education composition of the population can explain the level of indebtedness in households. For instance, households which are composed of individuals with high educational background usually have steeper life-cycle income paths, such that they are expected to borrow more at young ages. Thus, as the level of education qualifications increases, so will debt accumulation. One can reach the conclusion that, a country with a higher share of younger population is expected to have a higher debt accumulation, than an older generation, since the former borrow more.

Uncertainty: Lastly, households' attitude towards risks can alter life-cycle consumption and borrowing decisions. An individual chooses to build up a precautionary savings account, to save for uncertain situations such as employment uncertainty or fluctuation in interest rates. However, if uncertainty is reduced, individuals become less risk adverse, such that they lessen the need for precautionary reserves, save less which alternatively tends to boost borrowing.

With reference to these two frameworks, a lower real interest rate, a reduction in macroeconomic uncertainty, or the ageing of baby boom generation[1], have all been seen as possible factors that led to a rise in household indebtedness (Finocchiaro et al. 2011).

2.1.4 Determinants of Household Indebtedness: Deviating from the Standard LC/PI Model

So far, this discussion has focused on the standard LC/PI Model, to explain the reasons why rational households might increase their indebtedness. However, substantial evidences suggest that, this simplified paradigm, does not explain why households do not necessarily attain their

[1] Dynan and Kohn (2007) explore the effects of the ageing of the baby boom generation on the evolution of US household debt since 1983.

efficient consumption or borrowing levels. The factors discussed below are important to potentially explain how households alter their decisions to take more debts than what is expected from the standard LC/PI Model.

1. Credit Market imperfections

The simple LC/PI Model does not take into account credit market imperfections that exist in the real world. Imperfection in the credit market is an important determinant which is considered by households when making borrowing decisions (Hayashi, 1985).

Liquidity constraints

Households who experience liquidity constraints are most likely to under-borrow than they would optimally choose to borrow. However, in case of negative shocks, they will still be facing intensifying debt problems, as their ability to smooth consumption would be severely reduced. Hence, under such situations an individual's consumption or borrowing plans are likely to become non-optimal and unsustainable even with modest negative shocks (Gianni et al. 2007).

Financial Deregulation

Furthermore, financial deregulation in the form of reducing borrowing constraints can provide easier access to credit markets and increase the amount of credit available to more households and it can also allow a reduction in the cost of borrowing (Finocchiaro et al. 2011). In this sense, households who were previously excluded from the financial market, together with those who were borrowing less than their optimal level can now smooth out their consumption. A relaxation of the borrowing constraints would allow more households to reach their optimal borrowing level, thereby further raising household debt.

Excessive Borrowing

Imperfections in the credit markets can also induce over-borrowing (Lorenzoni, 2008, and Bianchi and Mendoza, 2011).

Over and above the credit market imperfections that surrounds us, the spending and saving behaviour of households is also determined by various factors such as their personal needs, tradition, beliefs, standard of living, existing indebtedness, net worth and disposable income.

Hence before looking at why households make irrational borrowing/consumption decisions, it is important to consider their personal attitude and personality factors as they influence the way households behave.

2. Personal Attitude and Personality Factors

Personal attitudes are generally characterized by subjective and personal tendencies to do something and weighting it in terms of favourable or unfavourable outcomes (Eagly and Chaiken, 1993). Attitude can further be decomposed into three significant components such as the cognitive, the affective and the behavioural component.

The cognitive component is based on an individual's knowledge, beliefs, perceptions, regarding for example debts which one acquired through experiences in one's life. It is the cognitive component which enables an individual to make behavioural decisions. The affective or emotional component consists of emotions and sentiments which aroused by just the mere thought of being in debt. The behavioural component relates to all the precise and clear behaviours towards credit or debts. These are decisions related to money management, family balance and recourse to credit, when using credits which should be differentiated by spending intentions (Cosma and Pattarin, 2012).

Another dimension of the effect of attitude on consumption and borrowing is the relevance of personality factors (Tokunaga, 1993; Davies and Lea, 1995). Personality factors are characteristics specific to an individual. Often pictured as the 'locus of control', it relates to the perception of one's own capacity of controlling the events of life (Cosma and Pattarin, 2012). An individual with internal locus of control has the conviction that the results of the life events depend upon his/her decisions and capacities. While on the other hand, external locus of control concerns the perception that one's own life's events depend upon external factors. Several researches exist on the role of locus of control in credit, debts and consumption behaviours. Livingstone and Lunt (1992) study has been one among many to highlight the role of locus of control in the explanation of debt[2].

[2] For more studies make reference to Dessart and Kuylen (1986), Perry and Morris, 2005, Hira and Mugenda, 1999

3. Behavioural Approaches

The attempt here is to cite some examples from various literatures, to explain circumstances and behavioural factors of households which make them take "irrational" consumption/borrowing decisions thereby further increasing borrowing above optimal levels.

In the previously discussed LC/PI Model, consumer taste, risk attitude and time preference were represented by predetermined parametric values and each individual's optimal consumption/borrowing plan was derived independently based under which group that particular individual lies(family structure, social and economic groups). However, there has been a growing literature on the possible interdependent nature of individuals' preferences, risks and borrowing plans. One such explanation rises from the prospect theory which attempt to explain the ''irrational'' decision making of households under uncertain circumstances (Kahneman and Tversky, 1979). According to the prospect theory, under circumstances where the outcome of the decision is uncertain, an individual optimistic or pessimistic behaviour will undoubtedly influence the decision making. Additionally, other researchers have argued that this process is further affected by the constantly evolving individual's preferences and habits, availability and reliability of information (Hodgson, 2003; Ekelund et al., 1995). Such evolving and independent nature of individual preferences can generate inappropriate behaviour or risk attitude, which could lead to self-control problems, excessive borrowing or myopia behaviour by households. Such behavioural attitudes are discussed below.

Self-control problems

In economics, households suffer from self-control problems when there is a conflict between their short-term and long term preferences. For instance, an individual who wants to save more for his retirement, but is not willing to cut consumption today, faces a self-control problem. Similarly self-control problem also arises when a relaxation in borrowing constraints boost borrowing but it actually lowers rather than increases the utility of households in the long run. Such behaviours clearly influence saving decisions and can lead to under-saving/excess borrowing (Laibson, 1996 and Angeletos et al. 2001).

Financial literacy and financial sophistication

In most cases it is the myopic households who might take on more debts because they do not have the necessary knowledge which will allow them to make the right investment decision. There is usually mismanagement of resources and they are more prone to external shocks, hence they can easily be victims of over-indebtedness than those who are financial literate and are far-sighted planners (Krusell and Smith 1998). Also, the financial market has evolved significantly in the recent years introducing new innovation in financial products. This requires high level of knowledge and sophistication among investors and also to individuals who are increasingly responsible to manage their own pension saving accounts[3].

Overconfidence and financial mistakes

Alternatively, households might mistakenly hold insufficient precautionary savings or extrapolate their debts because they are overconfident and underestimate the likelihood of future shocks (Kahneman, Slovic and Tversky 1982). For instance, they may interpret a historically low real interest rate by the bank as a permanent change in interest rate, and base their borrowing plans on such assumptions. Another plausible explanation is that household owners may be feeling wealthier when prices of houses are rising, however, they do not anticipate the increase in cost of maintenance of houses. They might take on too much debt to finance investment in housing services and less will be available to save for the future and during retirement period.

4. Housing and household indebtedness

A major share of household wealth is usually held in housing and fluctuations in house prices can make the whole economy vulnerable. Hence, housing has an important role to play in boosting household indebtedness.

Apart from being an investment asset, a house is also a durable good which is generally purchased before the consumption of its services. At higher house prices, larger amount need to be borrowed to make this purchase. This is known as the 'front-loading effect' where

[3] Mainly in the United States and Sweden where there was the shift from defined benefit to defined contribution pension plans has increased individuals' discretion in choosing how to allocate their retirement savings.

expenditures of housing services are more front-loaded compare to income. That is larger amount must be borrowed to receive the same housing services.

2.2 Empirical Review

A number of authors have tried to focus their research on the various explanatory factors that have contributed to a rise in household indebtedness. As the purpose of this paper is to explore the determinants and the possible implications of the Mauritian household debt, only papers concerning factors affecting household debt and consequences are reviewed.

2.2.1 Evidence of increasing household indebtedness through the traditional channels

This section presents several empirical studies that have used traditional channels such as interest rate, demographics and future income as proposed by LC/PI Model in the theoretical literature to explain the rise in household indebtedness.

Barnes and Young (2003) used a calibrated partial equilibrium overlapping generation model (OLG) to identify the causes of the rise in US household debt since the early 1970s. Changes to real interest rates and future income growth expectations, together with demographic effects, were considered to explain the rise in US household debt during 1990s. One of the interesting features of the calibrated model is that, it was able to explain many characteristics of US household borrowing, both in aggregate and cross-section. However, the model was unable to account for rising indebtedness during the 1980s when US was faced with high interest rates, lower income growth and an ageing population which would have tended to reduce aggregate borrowing. Finocchiaro and Queijo von Heideken (2007) used a similar approach in Sweden. Their empirical analysis revealed that the low level of real interest rates and lessen LTV (loan-to-value) requirements were mostly responsible for the increase in Swedish household debt since the 1990s. Likewise, Tudela and Young's study (2005) also used the OLG model to analyse the household debt in UK and they affirmed that the changes in interest rates, house prices, preferences, and retirement income affected household debt.

Other studies have used household survey data to be able to perform their analysis. The paper of Magri (2002) analysed the determinants of Italian households' participation in the debt market, by considering both demand and supply effects and using data from the Bank of Italy's Survey of

Household Income and Wealth. The results suggested that age, income, living area, and the enforcement cost of banks, have all important effects on household debt. Among the economic variables, income most importantly showed a positive correlation with the probability of debt. While living in small municipalities negatively affects loan demand, possibly due to high entry costs in the debt market. Kearns (2003), on the other hand used household-level data to explore the reasons why households fell into mortgage arrears during the 1990s in Ireland. His study suggested that a slight increase in interest rate would substantially increase mortgage repayment burdens for a large number of newly mortgaged households, such that they would fall into arrears on their mortgage repayments dates. Unemployment was also identified as a significant factor to household indebtedness. In the last part of his paper, Kearns concluded that the continuing strong growth of mortgage lending, caused by relaxed lending criteria and households accepting higher repayment burdens, and the rising unemployment may lead to a higher rate of mortgage arrears among households. Brown and Taylor (2008) used three different sources of survey data related to US, Germany and UK to identify the factors affecting secured and unsecured debt. The results of their Tobit model showed that age, income, education level, gender, marriage ethnicity, number of children, household size and employment were significant factors determining debt in US and Germany, but not for Britain. Health status was found to be significant only for Britain.

2.2.2. Evidence of increasing household indebtedness through other channels

Dynan and Kohn (2007) study complement the work of Barnes and Young (2003) to explain the rise in US household indebtedness since the early 1980s. Low interest rate and the shift of baby-boom generation, from the youngest to the middle age group, have partially boosted aggregate debt. In addition to these variables, Dynan and Kohn (2007) also introduced house prices and financial innovation as explanatory variables to explain household indebtedness in US. Their study reported that rising house prices were able to justify one fifth of the total increase in household debt. As far as financial innovation was concerned, on one hand the provision of easier access to credit markets to household explained one seventh of the increase in household debt between 1983 and 2004. On the other hand, mortgage securitization on interest rates and the interplay between house prices and financial innovations were also important. Dynan and Kohn's main conclusion was that changes in interest rates, income growth or in preferences could only partially explain the uptrend of debt, while rising house prices and financial innovation were fundamental.

Philbrick and Gustafsson (2010) analysed the determinants of the household debt to disposable income ratio in Australia using both the long-run cointegration analysis and a short run error correction model. These authors considered the theoretical view of the LCH proposed by Ando and Modigliani. The results showed that in the long run the change in the debt ratio depends positively on house prices and negatively on interest rates. While in the short run it depends positively on the change in house prices and the consumer sentiment index and negatively on inflation and long-run equilibrium error term. Similarly, Meng et al. (2011) employs a Cointegrated Vector Autoregression (CVAR) model to explore the determinants of Australian household debt. The study used seven variables GDP, number of new dwelling approvals (NDWELL), house price index (HPI), interest rate, unemployment, consumer price index (CPI) to analyze the main reasons why Australian households record high debt levels. The results showed that GDP was the most important determinant, followed by the housing prices and the number of new dwellings. While, interest rates, unemployment rate and inflation were found to have a negative effect on Australian household debt; interest rates being the most significant one.

More specifically, Aron and Muellbauer (2000) utilised the South African Reserve Bank (SARB) data to estimate the impact of financial liberalisation on household consumption and household debt in South Africa during the early 1990s. The originality of the study is that, it introduced financial liberalization as an unobservable, proxied by a spline function, and entering both consumption and debt equations. The empirical results confirmed that financial liberalization, fluctuations in asset values and asset accumulation, and of income expectations have important implications on consumers excessive spending and increasing household debt in South Africa. Gerardi et al. (2010) adds to the explanation as they provide evidence that the deregulation of the mortgage market in the United States in the early 1980s led to an increase in borrowing among households with higher expected future incomes. Also, they attributed part of the massive defaults and financial mistakes observed in the US mortgage market to limited financial literacy among borrowers (Gerardi et al. 2010b). Almenberg and Widmark (2010) analysis was based on survey of 1,300 Swedish adults and they concluded that financial literacy substantially varied across different demographic groups and that they were an important determinant behind stock market participation or homeownership choices. In their sample, the oldest (age > 65) and youngest (age 18-29) respondents showed a low level of financial literacy. They conclude that many Swedish adults were not well equipped to make complex financial decisions.

2.2.3 Evidence of the implications of rising household debt

High household indebtedness can have important consequences that affect both one's personal welfare and also the society as a whole. The recent financial crisis is a crucial example that over-indebtedness can lead to financial distress and can further intensify the effect of the crisis. Firstly, let's explore the consequences of household indebtedness that affect personal welfare.

Households with debt find it more difficult to maintain a decent standard of living. An increase in indebtedness implies that household need to cut current consumption may be on basic necessities as well to pay debts. In a study by the EU, the level stakeholders rated the consequence of reduced standard of living as highly significant (Alleweldt et al 2013). Hayes (2000), on the other hand emphasized that financial difficulty is linked to social stigmatization. The way society treats or judge over-indebted household can be influencial. Social exclusion is another implication of being indebted. Kempson,(2002) provide evidence that the inability to participate in financial activities due to lack of resources and income, is also closely associated with over-indebtedness Most importantly deteriorating health has been identify by many researchers as both a cause and a consequence of financial difficulty. A stakeholder in Germany cited research that higher debt level is strongly correlated with physical health, mental health, and obesity (Alleweldt et al 2013). Using individual-level panel data from 1991 to 2008, Gathergood (2012) found that "people in the UK who have trouble paying their debts are more than twice as likely to have mental health problems or suffer severe anxiety compared with the general population. Furthermore, people with housing debt (arrears on mortgage or rent payments) had a rate of mental health problems three times higher than in the general population". Relationship breakdown can be both a cause and a consequence of financial difficulty (Kempson, 2002).

Other macroeconomic implications of household indebtedness include loss of job, financial distress, and an increase in prices of houses.

Indebted household may be faced with a big fall in income or unemployment, and as such they are more likely to go default. Financing difficulties would be even more severe if the rise in unemployment were associated with higher interest rates, as was the case in UK during the early 1990s. Greater household indebtedness could also considerably reduce households' mobility in search of a new job in a downturn greater household indebtedness might also reduce the ability of households to relocate in search of employment in a downturn (Sterk 2010).

The Great Depression in 1930s and the recent financial crisis have led to the most severe recession that the world economy had to endure. One striking truth from these two crises has been that they were both followed by a dramatic increase in household leverage. Household debt exceeded 100% of GDP only twice in the last century of American history: in 1929 and in 2006 (Mian and Sufi 2010). Glick and Lansing (2010) observed different countries between 1997 and 2007 and concluded that the countries that were affected by the crisis followed three common patterns: 'firstly, household debt increased considerably and at a faster rate than disposable income in many countries before 2007. Second, there is a positive correlation between the rapid increase in household debt and house prices. Third, countries experiencing the largest increase in debt have also experienced the most severe depressions' (Finocchiaro et al. 2011).

Finally, an increased in household indebtedness implies that households would be more exposed to a decline in house prices such that homeowners will be faced with negative equity. The primary impact of a substantial fall in house prices, might be lower consumer confidence and reduced household spending, could shrink home equity down to a level such that the mortgage debt on a property exceeds its market value. Chakrabarti et al. (2011) conducted a survey in the US and the response showed that the recent decline in house prices, have caused the "effective homeownership rate", that is the proportion of individuals with a positive amount of home equity, to fall by more than 7 percentage points since 2007.

3.0 OVERVIEW OF HOUSEHOLD INDEBTEDNESS IN MAURITIUS

In Mauritius, it can be observed that many households have been living beyond what their means actually allow them (NESC 2011). This picture is made clearer when the Association for the Protection of Abused Borrowers (APEA) highlights that, out of four Mauritians households, three have difficulties to honor their debts and make repayment of their credits. Moreover, 75%

of Mauritian families are having a hard time paying their monthly dues and 10% of them are facing a situation of over-indebtedness as they can no longer pay the accumulated credits[4]. The president of APEA Michel Hardy thus recommends an increase in financial literacy among the population, so that households are in a better position to take financial decisions and can avoid situations of over-indebtedness.

3.1 Indebtedness and Households

The recent figures in Figure 1 show that the aggregate debt-to-income ratio of the Mauritian households has maintained a steady upward trend until 2014, where it remained relatively stable during the year. Total Household Credit growth has also remained strong over the past years (Figure 2), and the ratio of debt to disposable income for the Mauritian households has now risen to approximately 55 per cent in the last quarter in 2014. From Figure 2 it can be deduced that the increase in the debt-to-income ratio was driven mostly by housing credit, but since the last year, consumer credit has also been a contributing factor. Around 60% of household credit was allocated for housing purposes and the remaining credit was used for consumption purposes (BOM 2014)

Figure 1: Ratio of Household Debt to Disposable Income

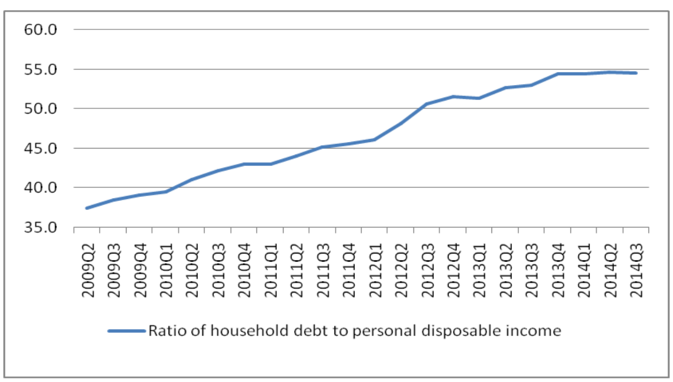
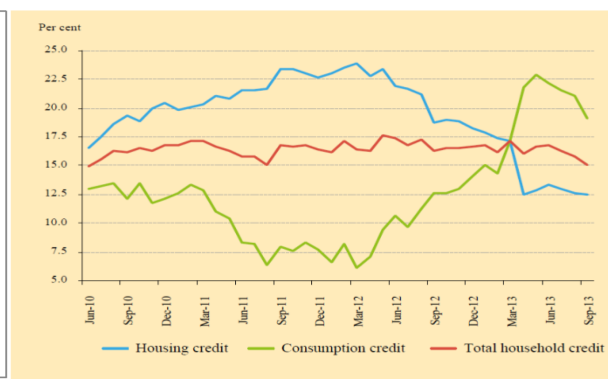


Figure 2: Growth of Household Credit



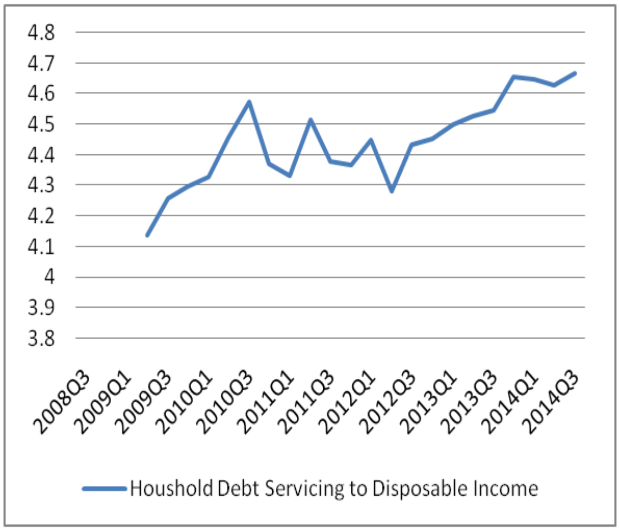
Source: *BOM Financial Stability Report - (Feb 2014)*

In the same line of study, it becomes important to look at household debt burden which is measured by debt repayment as a percentage of income. This particular indicator shows the proportion of household income that is disbursed to repay their debts. Figure 3 shows an increasing debt burden among the households, implying a higher risk associated with borrowing. Additionally, Figure 4 illustrates on which particular items Mauritian household usually repay

[4] Le Défi Quotidien newspaper: October 16th 2013

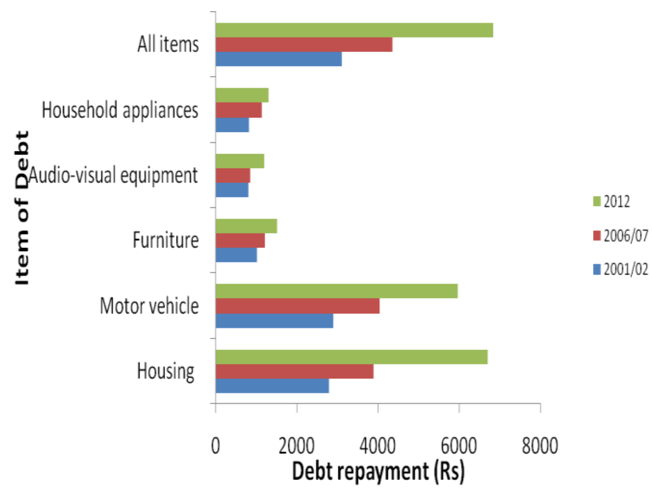
their debts. The increase in debt repayment in the last decade was sharpest for housing (140%), which was followed by motor vehicle (106%). During the same period, debt repayment on other articles such as furniture, audio-visual equipment and household appliances increased by around 50% (Ajodhea, CSO, 2013).

Figure 3: Household Debt Servicing to Disposable Income



Source: Bank of Mauritius

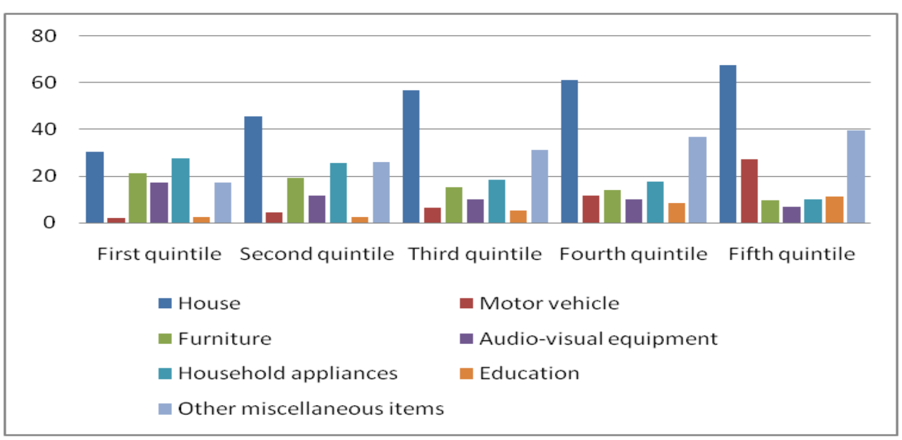
Figure 4: Average monthly loan repayment by item of debt, 2001/02, 2006/07 & 2012 HBS



Source: HBS (2001,2006, 2012)

Other indicators that are important for analysing household indebtedness are illustrated below. Figure 5 illustrates clearly, families with low income are more exposed to hire purchase (furniture and home appliances) expenditure as opposed to high-income families, whose indebtedness is tending more towards mortgage loans (houses and also motor vehicles).

Figure 5: Indebted households (%) by item of debt and income quintile, 2012

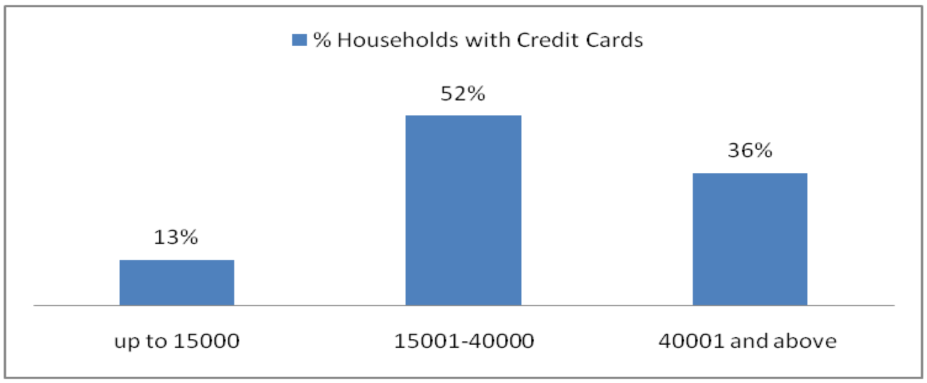


Source: HBS, 2012

3.2 Household Indebtedness and Credit Cards

Financial innovations have swept the world with different innovative instruments. One such development is the widespread use of credit cards which helps individuals to make purchases, without being hindered by the level of their bank balances. Figure 6 shows households are making increasing use of this facility, and the number of credit cards in circulation is on an upward trend. This activity should be closely be monitored as it represents a form of permanently gyrating debt and may later have implications on the financial stability of the household sector and the economy as a whole.

Figure 6: Households with Credit Card Facilities by Income Group, 2012

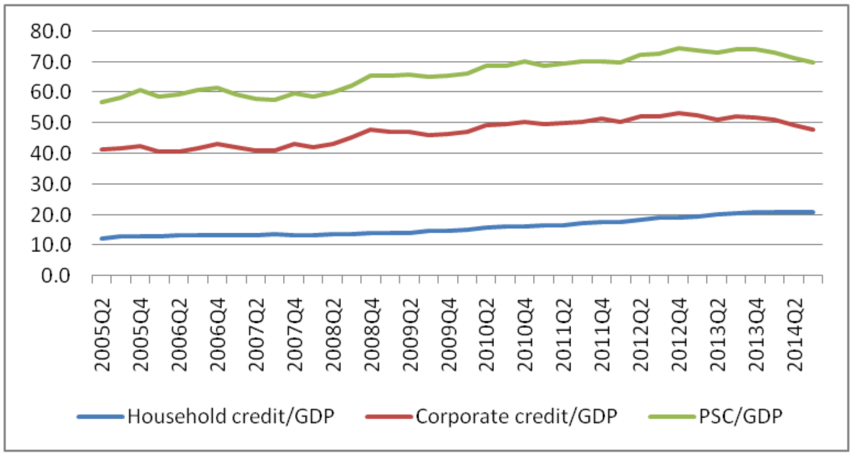


Source: Continuous Multi- Purpose Household Survey(2012)

The Bank of Mauritius (BOM) shows a more holistic approach as far as credit is concerned. Statistics showed that total household credit represented 27.4 per cent of total private sector credit as at the end of September 2013. A higher percentage of household credit was noted as compared to 25.9 per cent as at the end of September 2012.

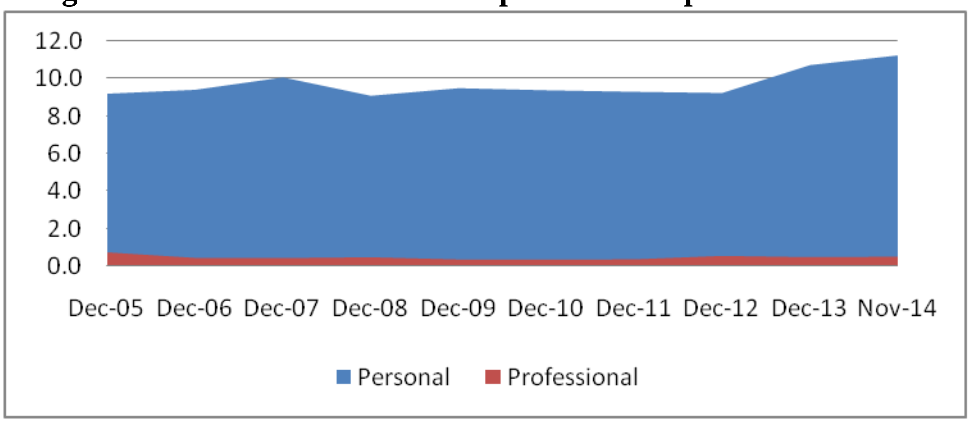
As a percentage of GDP, household credit stood at 19.5 % for the first quarter of 2013 compared to 19.2% for the four months of 2012 and 17.7% for the first quarter of 2012. And more recently, household credit stood at 20.3% as at end-September 2013 (Figure 7). However relative to corporate credit and PSC, household credit takes up a lower percentage of GDP.

Figure 7: Household Credit, Corporate Credit and PSC as a percentage of GDP



Source: Bank of Mauritius

Figure 8: Distribution of credit to personal and professional sector



Source: Bank of Mauritius

And as far as the distribution of credit between personal and the professional sector is concerned, the above figure shows clearly that credit given to working individuals (personal) are higher than credit given to professional bodies or individuals for the purpose of carrying out day-to-day business.

3.3 Indebtedness and Macroprudential policies

In order to maintain financial stability in the country, BOM has issue five macroprudential policy measures in October 2013 to be implemented by all commercial banks. These measures include: (i) Loan-to-Value Ratio (LTV) (ii) Debt-to-income (DTI) (iii) Risk-weighted assets (iv) Provision Additional Portfolio and (v) Segment Limit. These measures are expected to cool down the concentration risk that exists in the property market.

Loan-to-Value Ratio (LTV ratio)

The LTV ratio for commercial loans or private, impose a ceiling on the amount of a loan relative to the value of the property, which helps to limit losses in the case of default or decrease in property value. Through these prudential limits, the Bank of Mauritius aims to "discourage speculation and prevent excessive debt associated with rapid credit expansion in the construction sector."Moreover, the Bank is also constantly encouraging banks to apply the LTV limits when granting credit facilities for the purchase or construction of a first property above Rs5 million and/or any subsequent residential building. For first-time buyers, the LTV ratio has been extended to 90 per cent for housing loans below Rs5 million. Alongside, individual borrowers who are entitled to housing loans under the national housing empowerment scheme are being exempted from this prudential requirement. The LTV ratio has been extended to other sectors as from1 January 2014.

Debt-to-Income Ratio (DTI ratio)

This measure came into effect on 1 January 2014, and it is a safeguard measure to better support individuals buying residential property because the BOM is highly concerned of the increasing household debt levels in Mauritius. Mortgage loans represent a large proportion of Mauritian household indebtedness, thus this measure ensure that borrowers are not over-indebted whenever they borrow for the acquisition of a property. The conditions to grant credit facilities for the purchase or construction of residential property, is that the DTI ratio of the borrower should not exceed 40% of the latter's gross monthly income, if income is less than Rs 200 0000 or 50% if income is more than Rs 200,000.

Risk-Weighted Assets

As from 1 July 2014, there has been an increase in the risk weights on claims secured by residential property and commercial real estate for the acquisition of property. The property and housing market is a source of vulnerability for the financial system, thus this measure allow banks to hold extra capital which will ultimately improve resilience of the banks in Mauritius.

Additional Portfolio Provision

Formerly, banks were required to maintain a 1 per cent loan loss provision as cushion against potential future credit losses on loans that have not been assessed for impairment. However, as from1 January 2014, "over and above the existing portfolio provision of 1 per cent, banks were required to make additional portfolio provision of 0.5 per cent for the *housing* segment under the '*construction*' sector. Afterwards the conditions were extended to the *commercial, residential* and *land parceling* segments under the '*construction*' sector, as well as to the '*tourism*' and '*personal*' sectors, and effective 1 January 2015, the additional portfolio provision for these three specific categories will be increased to 1.0 per cent." (BOM, 2014)

Segment Limit

Moreover, in order to reduce concentration of credit risk in the economy, the Bank has introduce sectoral credit limits on the *commercial*, *residential* and *land parceling* segments of the '*construction*' sector, as well as in the '*tourism*' and '*personal*' sectors in a phased manner starting 1 July 2014. The maximum credit limit grant varies across sectors, as from 1 July 2014, only 15% of the total credit would be granted to the construction sector.

(Five Macro-prudential policies Source: Bank of Mauritius)

4.0 METHODOLOGY

4.1 Overview

Data are categorised either as primary or secondary data sets (Stevens et al, 2006). Data that we referred to in published articles or from others' work are known as secondary data. However, for the purpose of this study, primary data are more appropriate and suitable. Thus, by nature primary data collection system involves information collected via questionnaires, interviews or observation. These are data that are collected for some specific purpose and to attain some specified research aim (Aaker et al, 2007). For the purpose of this study, questionnaires are appropriate given that we will be able to increase the response rate and at the same time, decrease the scope for errors to occur. Questionnaires, by nature are forms that contain questions related to the main research topic and where we expect respondents to answer them correctly and honestly

The questionnaire has specifically been designed to provide a holistic picture of households' financial circumstances. Given the technicality of the subject, two filter questions have been included at the start of the questionnaire to target people who feel concern about their current level of debts. The questionnaire asks both qualitative and quantitative questions, but the use of qualitative questions is limited to avoid disparity in the answers. Additionally, the survey represents both an individual and household dimension. Individual dimension covers questions on individual financial position, behaviour and financial knowledge. While, the household dimension gather details of the household structure, demographics, household-level finance.

4.2 Structure of questionnaire

The questionnaire is structured into various sections.

Section A comprises of a scale question that give the respondent a range of views on the most prevalent causes of household moving into indebtedness. Respondent opinions on the drivers of household indebtedness can be summarized into three categories: financial imprudence, income shocks and macroeconomic shocks.

Section B assesses the financial knowledge of the respondent. As discussed in the literature, individual with lack of financial understanding are more commonly faced with indebtedness. In this respect, the first subsection relates to some statements on financial concepts, while the other section relates to the respondent knowledge on financial products.

Section C determines the perception of the respondents on the likely consequences of high level of household indebtedness in Mauritius. The implications of rising indebtedness are categorized into socio-cultural and economic consequences.

Section D presents various remedies to reduce the level of indebtedness. The respondents are required to indicate their level of agreement or disagreement based on the different categories. The main remedies are grouped as income and asset adequacy, financial inclusion, improving financial literacy and responsible lending and borrowing.

In the recent years, studies have converged towards some common indicators to measure over-indebtedness. Though there is no universal consensus on which indicator best captures correct over-indebtedness (see Disney et al 2008 and BIS 2010), Section E presents those set of indicators to capture the level and extent of over-indebtedness in Mauritius. The indicators broadly reflect five dimensions of over-indebtedness: cost of servicing existing debt obligations, making heavy use of credit, being in arrears, making high debt repayments relative to income and self-reporting debt problems and financial stress. All these indicators are presented to the respondents as each dimension capture debt problems in different household composition and at different points in their life cycle which will provide valuable information.

Respondent were asked about patterns in over-indebtedness across different forms of credit instrument, their financial commitment towards those credit instruments, the components of their debt structure and also the cost of servicing these existing debt obligations.

The count of credit commitments instill the total number of credit commitments held by the respondent. The conventional over-indebtedness indicator for credit commitments identifies households with four or more commitments (see for example, BERR 2007; BIS 2010).

The household arrears indicator identifies households in which any members are behind with an unsecured credit commitment or the household is behind with 2 or more consecutive payments on any household bills.

Debt to income ratio is split into separate indicators for unsecured and total debt repayments.

- Unsecured repayment-to-income ratio identifies whether total household repayments of unsecured debt are greater than 25% of gross household income.
- Total debt repayment-to-income ratio identifies whether total household repayments of all debt are greater than 50% of gross household income.

And finally the last dimension is a subjective over-indebtedness indicator. Respondents self-report on the financial situation of their household. It typically relates to whether respondents are finding it a burden to repay their debts.

Section F consists of two subsections to assess and measure the attitude and personality of the respondent. The first section consists of twelve questions about attitudes toward credit and the other section of six questions about the locus of control. All given statements are on a five-grade likert scale. Respondents have to respond to their level of agreement is from 'strongly agree' to 'strongly disagree'.

The assessment of attitudes toward credit follows the approach of Lea, Webley and Walker (1995). Five items relate to the cognitive attitude, three to the emotional and four to the behavioural one (See Appendix). As to measuring the locus of control, the Lumpkin's scale (1985) is used in this research as more prudent solution, based on six items. In Lumpkin's scale, three questions are structured towards external locus and three towards internal locus.

4.3 Sample

The targeted population for the purpose of this study will include Mauritian residents who have contacted a debt and who is a permanent of the homeland. Considering the sample frame, it is viewed as "*a record of the population of interest from which researchers select their respondents to be included in their research"* (Wilson, 2003). As such this study will first adopt a stratified random sampling method to determine the number of respondents required from each district of Mauritius (also taking into account age, gender and income level). Thereafter, a convenience and random sampling was used to select the respondents from each region. We ended up with 305 usable survey questionnaires.

5.0 ANALYSIS

For the sake of this study, we shall initially dwell into the descriptive analysis, after which further investigation was made using factor analysis, simple regression as well as test of differences.

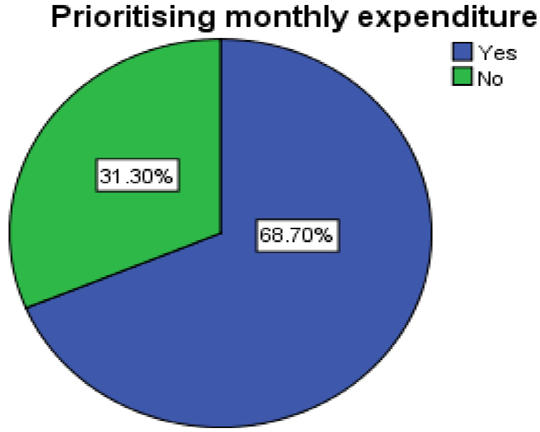
5.1 Descriptive Analysis

The first two questions asked to the respondents in the survey suggest one key conclusion, that currently, the respondents are having a hard time with their level of debts.

Indicator	Mean	Standard deviation	Skewness	Kurtosis	Not at All	A Little	Moderately	Much	Very Much
Level of concern about current level of debts	3.63	1.111	-.463	-.468	4.3%	10.6%	29.1%	29.8%	26.2%

A larger proportion of the respondents (85.1%) are concerned about their current level of debts. Among them 29.1% were moderately concerned, 29.8% were much concerned and 26.2% were very much concerned about their level of debts while around 15% claimed not to be affected and very little affected by their levels of debts.

Figure 8



The pie chart follows a similar result as above. Among the respondent, 68.7% agreed to have prioritized their monthly expenditure due indebtedness circumstances. These two questions already provide an insight about the current level of financial circumstances the households are going through.

Section A: Causes of Household Indebtedness

Table 1: Causes of Household Indebtedness

Indicators	Mean	Standard Deviation	Skewness	Kurtosis	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Persistent low income	3.72	1.093	-.632	-.079	4.9%	6.3%	29.2%	31.3%	28.5%
Inability of coping with expenses	3.62	1.113	-.591	-.447	4.2%	14.7%	18.9%	39.9%	22.4%
Financial exclusion	3.33	.956	-.293	-.138	3.6%	13.9%	38.0%	35.0%	9.5%
Lack of financial literacy to financial planning	3.38	1.213	-.314	-.922	7.0%	20.2%	20.9%	31.8%	20.2%
Lack of financial literacy to changes in	3.41	1.204	-.398	-.818	7.3%	18.2%	20.4%	34.3%	19.7%

Interest rate

Lack of financial literacy to other loan conditions	3.38	1.170	-.391	-.756	6.9%	18.5%	21.5%	36.2 %	16.9%
Lack of ability to manage finance correctly	3.39	1.169	-.323	-.938	5.1%	22.8%	17.6%	36.8 %	17.6%
Obtaining debt hire purchase	3.67	1.046	-.920	.453	5.3%	9.1%	17.4%	50.0 %	18.2%
Obtaining debt credit cards	3.65	1.061	-.935	.371	5.6%	10.3%	15.1%	51.6 %	17.5%
Obtaining debt unsecured bank loans	3.50	1.108	-.591	-.397	5.6%	15.1%	19.8%	42.9 %	16.7%
Obtaining debt long term loans	3.51	1.112	-.657	-.247	6.4%	12.8%	20.8%	43.2 %	16.8%
Obtaining debt leasing	3.51	1.144	-.672	-.337	7.1%	13.5%	18.3%	43.7 %	17.5%
Obtaining loans credit union/ provident funds	3.49	1.151	-.637	-.416	7.1%	14.3%	18.3%	42.9 %	17.5%
Over borrowing	3.40	1.313	-.390	-1.023	10.4%	18.1%	17.4%	29.9 %	24.3%
Peer pressures	2.99	1.260	.098	-1.085	11.8%	29.2%	21.5%	22.9 %	14.6%
Unemployme nt	3.17	1.429	-.183	-1.361	16.8%	21.7%	11.9%	27.3 %	22.4%
Illness	3.31	1.297	-.507	-.871	14.0%	13.3%	17.5%	37.8 %	17.5%
Family breakdown	2.83	1.375	-.059	-1.331	26.6%	14.0%	20.3%	28.7 %	10.5%
A new born baby in the family	2.93	1.417	.411	.822	21.7%	17.5%	21.0%	28.7 %	10.5%

Death of family member	3.03	1.366	-.182	-1.248	19.6%	17.5%	17.5%	30.8 %	14.7%
Increase in cost of living	4.21	1.898	7.913	83.992	1.4%	7.0%	8.4%	49.0 %	33.6%
High prices of real estates	3.89	1.110	-.841	.064	4.3%	6.4%	22.1%	30.0 %	37.1%
Gambling	3.32	1.546	.038	-.262	17.6%	15.5%	16.2%	21.1 %	28.9%
Flashy life style	3.04	1.424	-.075	-1.335	19.7%	19.7%	16.9%	23.9 %	19.7%
Financing education	3.79	1.162	-.811	-.123	5.6%	9.1%	18.9%	33.6 %	32.9%
Cigarettes / Alcohol	3.33	1.342	-.318	-1.024	13.2%	13.9%	25.0%	22.9 %	25.0%
Wedding	3.17	1.331	-.242	-1.085	15.5%	16.2%	22.5%	27.5 %	18.3%
Business physical investment	2.96	1.214	-.135	-.951	15.5%	19.7%	27.5%	28.2 %	9.2%
Financial investment	2.93	1.258	-.082	-1.026	17.6%	19.0%	26.8%	26.1 %	10.6%
Provide financial assistance to a family	3.08	1.212	-.140	-.899	12.0%	20.4%	27.5%	27.5 %	12.7%
Others(Houses)	3.23	1.197	-.366	-.541	12.8%	9.0%	36.1%	27.1 %	15.0%

When asked about the key causes which exposed households to the risk of excessive debt, indebtedness and other financial problems, on average respondents agreed that the increase in cost of living ($\bar{x}$ = 4.21, *SD* = 1.898) is one of the main causes. It is followed by the rise in the price of real estate, financing education, persistent low income, inability of coping with expenses and obtaining debts on hire purchase. A new born baby in the family($\bar{x}$ = 2.93, *SD* = 1.417), shows a controversial situation where on average respondents showed it is the least likely source of indebtedness, however, 39.7% disagree with the statement while 39.2% agree a new born baby can cause a household to go indebted.

Section B.1: Financial Literacy

Table 2: Assessment of Financial Literacy

Indicators	Mean	Standard Deviation	Skewness	Kurtosis	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Investment with high return is like to be high risk	4.08	.931	-1.338	2.120	2.8%	4.2%	9.8%	48.3 %	35.0%
Chance to make money there is also chance to lose lot of money	3.95	1.013	-1.229	1.406	4.2%	5.6%	11.3%	48.6 %	30.3%
High inflation means rapid increase in cost of living	4.04	.854	-1.315	2.923	2.8%	1.4%	13.4%	54.2 %	28.2%
Reduce risk of investing in stock market by buying wide range of stocks and shares	3.51	1.128	-.486	-.369	6.3%	10.6%	29.6%	32.4 %	21.1%
Less likely to lose money if save in more than one place	3.69	1.156	-.851	.110	7.7%	6.3%	21.1%	38.7 %	26.1%
Household should engage in proper budget	4.25	.862	-1.728	4.175	2.8%	1.4%	6.3%	46.5 %	43.0%

Indicator	Mean	Standard Deviation	Skewness	Kurtosis
Overall Financial Literacy	3.9219	.65775	-.827	2.180

As significant as 90% of the respondent agreed to the fact that household should engage themselves in proper budgeting habits as a first step to control for excessive debts and liquidity problems in the households. The overall financial literacy score further explains that on average, households are financially literate and are aware of the risks involved with financial products ($\bar{x}$ = 3.92, *SD* = 0.657).

Section B.2: Financial products

Table 3: Knowledge of Financial Products

Financial Products	Mean	Standard Deviation	Skewness	Kurtosis	Very Low	Low	Neutral	High	Very High
Pension Fund	3.12	1.242	-.206	-1.060	11.9%	23.1%	18.9%	33.6%	12.6%
Investment Account	2.62	1.070	.352	-.366	14.8%	33.1%	33.1%	13.4%	5.6%
Mortgage	3.15	1.171	-.144	-.913	8.4%	23.8%	24.5%	30.8%	12.6%
Bank Loan Secured on Property	3.54	1.052	-.701	.078	5.7%	9.9%	24.8%	44.0%	15.6%
Unsecured Bank Loan	3.20	1.144	-.309	-.707	9.2%	18.3%	27.5%	33.8%	11.3%
Credit Card	3.50	1.090	-.796	.121	7.9%	8.6%	23.6%	45.7%	14.3%
Current Account	3.59	1.030	-.631	.001	4.2%	10.5%	25.2%	42.7%	17.5%
Savings Account	3.77	1.039	-.821	.061	2.8%	12.6%	13.3%	47.6%	23.8%
Term of Deposit Account	3.45	1.174	-.475	-.732	6.4%	18.4%	17.7%	39.0%	18.4%
Microfinance Loan	2.74	1.262	.191	-1.068	19.1%	28.4%	20.6%	22.7%	9.2%
Insurance	3.49	1.122	-.364	-.703	4.2%	16.9%	24.6%	33.8%	20.4%
Stocks and Shares	2.62	1.213	.284	-.904	21.1%	28.9%	23.9%	19.0%	7.0%
Bonds	2.59	1.210	.148	-1.132	23.9%	25.4%	22.5%	23.9%	4.2%

Mobile Phone Payment Account	2.91	1.244	-.003	-1.097	15.4%	25.9%	21.0%	28.0%	9.8%
Prepaid Payment Card	3.01	1.291	-.214	-1.155	17.6%	19.0%	19.0%	33.8%	10.6%

As a way to determine how knowledgeable and up-to-date respondents are to the financial development and its financial products, table 3 summarises their responds. On average, respondents are much more acquainted to the savings account ($\bar{x}$ = 3.77, *SD* = 1.039), where around three quarter of the sample agree of knowing its purpose. Also among the most known financial products are current account, bank loan secured on property, credit cards, and insurance. A very low percentage (28.1%) of the interviewees, however have a better understanding of the notion of bonds. Apparently, respondents are more inclined towards traditional and more secured financial and banking services. Though credit cards was found to gain popularity among the respondent ($\bar{x}$ = 3.50, *SD* = 1.090).

Section C: Consequences

Table 4: Implications of Household Indebtedness

Consequences	**Mean**	**Standard Deviation**	**Skewness**	**Kurtosis**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Immoral behaviors	3.83	1.130	-.919	.207	5.6%	7.6%	17.4%	37.5 %	31.9%
Family breakdown	3.71	.969	-.951	.936	4.2%	6.3%	21.0%	51.0 %	17.5%
Stress	3.74	.946	-.683	.498	2.8%	5.7%	27.0%	44.0 %	20.6%
Alcoholism	3.81	1.012	-.953	.755	4.2%	6.3%	18.8%	46.5 %	24.3%
Suicidal tendency	3.50	1.163	-.520	-.473	7.1%	12.1%	25.5%	34.0 %	21.3%
No work life balance over work	3.63	1.121	-.813	.085	7.0%	8.5%	20.4%	43.0 %	21.1%
Decreased self esteem	3.45	.999	-.739	.426	6.4%	7.1%	32.1%	43.6 %	10.7%

Social exclusion	3.43	1.126	-.608	-.223	8.5%	9.9%	27.5%	38.7 %	15.5%
Debt trap	3.83	1.042	-1.037	.856	5.0%	5.7%	17.0%	46.1 %	26.2%
Loss of productivity	3.73	1.031	-.633	.054	3.6%	7.1%	27.1%	37.1 %	25.0%
Fall in current consumption	3.62	1.050	-.639	-.059	4.2%	10.6%	23.9%	41.5 %	19.7%
Struggling to meet basic needs	3.88	.960	-.985	.958	2.8%	6.4%	16.3%	48.9 %	25.5%
Financial instability	4.05	.842	-.681	-.013		5.7%	15.7%	46.4 %	32.1%

The above table presents the view that, on average the respondents believe a high level of indebtedness among households to have adverse effect on the economy. Most specifically, it is perceived to disturb the financial stability in the country ($\bar{x}$ = 4.05, *SD* = 0.842). Overall, the consequence of high indebtedness was more inclined towards the adverse economic shocks that the country may face, families struggling to meet basic needs followed by debt trap among others. The social impact is not to be left behind, around 70% of the respondent perceived that indebtedness may lead individuals to act immorally and commit fraud and corruption in the society ($\bar{x}$ = 3.83, *SD* = 1.130). Alcoholism, stress, and family breakdown are the other negative social impact that respondents consider as likely consequences.

Section D: Remedies

Table 5: Remedies towards Indebtedness

Remedies	**Mean**	**Standard Deviation**	**Skewness**	**Kurtosis**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Increasing disposable income / min wage	4.15	.830	-1.330	2.604	1.4%	4.2%	7.0%	53.1 %	34.3%
Campaigns on financial planning/ campaign	4.13	.830	-1.291	2.497	1.4%	4.2%	7.7%	53.8 %	32.9%

against overspending									
Rescheduling of debts/ individual voluntary agreement	3.87	.832	-.506	-.138		7.0%	20.4%	50.7 %	21.8%
Encouraging savings	4.11	.851	-.848	.273		6.3%	12.0%	45.8 %	35.9%
Reduction in charges and fines	3.87	.956	-.677	.051	1.4%	7.7%	21.0%	42.0 %	28.0%
More social lenders	3.53	1.086	-.617	-.197	5.6%	11.9%	23.8%	41.3 %	17.5%
Increase awareness: Media	4.07	.757	-.622	.343		3.6%	14.5%	53.6 %	28.3%
Increase awareness: Social media	4.03	.804	-.894	1.260	.7%	4.3%	13.6%	54.3 %	27.1%
Increase awareness: Specialised office	3.97	.882	-1.051	1.626	2.2%	3.6%	16.1%	51.1 %	27.0%
Financial capability training to professional to provide services to indebted households	3.84	.816	-.490	-.073		7.1%	21.3%	52.5 %	19.1%
Increase financial literacy programmes	4.06	.709	-1.188	3.305	.7%	3.5%	7.1%	66.0 %	22.7%
Provide budgeting advice and assistance: face-to-face	4.10	.730	-.603	.411		2.8%	13.5%	54.6 %	29.1%
Provide budgeting advice and assistance: telephone	3.93	.848	-1.018	1.856	2.2%	2.9%	18.0%	54.0 %	23.0%
Provide budgeting advice and assistance: online/email/social media	3.94	.850	-1.089	1.985	2.1%	3.6%	15.7%	55.7 %	22.9%

Creation of association	3.90	.925	-.893	.861	2.1%	5.6%	18.3%	47.9 %	26.1%
Consumers get appropriate information when taking loans	4.40	.754	-1.220	1.210		2.8%	7.7%	35.9 %	53.5%
Setting main credit scoring register	4.08	.782	-.498	-.247		2.8%	18.3%	47.2 %	31.7%
Introduced more stringent regulations to various forms of borrowing	4.06	.864	-.596	-.064	.7%	2.1%	23.4%	37.6 %	36.2%

As solutions to reduce and mitigate the risk of having excessive debts, on average a higher proportion of the respondents (89.4%) agreed that individuals should be provided with meaningful and appropriate information when taking loans ($\bar{x}$ = 4.40, *SD* = 0.754). Other measures respondents found vital is the increase in disposable income or minimum wage, campaigns on financial planning and the increase in financial literacy programmes.

Section E: Indicators of Over-indebtedness

As mentioned previously, the survey provides a unique section which asks households questions on credit and debt, as a way to quantify and determine the level of indebtedness, which is something that is not readily available.

Section E1 Ways of borrowing money over the past 12 months

Table 6: Ways of borrowing money over the past 12 months

	Mean	Standard Deviation	Skewness	Kurtosis	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Bank overdraft	2.19	1.272	.822	-.504	39.6%	28.8%	11.5%	13.7%	6.5%
Fixed term loan from bank	2.61	1.416	.303	-1.307	30.7%	22.6%	13.1%	21.9%	11.7%
Loan from a finance company	2.29	1.280	.627	-.781	37.0%	24.6%	17.4%	14.5%	6.5%
Loan from a friend or relative	2.29	1.257	.733	-.542	33.3%	31.9%	14.5%	13.0%	7.2%
Loan from employer	2.38	1.319	.552	-.986	34.1%	27.5%	12.3%	18.8%	7.2%
Credit cards	3.04	2.959	7.638	77.121	28.3%	15.9%	16.7%	21.7%	16.7%

Table 6 assesses the relevance of the channels through which the households have been currently borrowing from. In this particular case it is cumbersome to comment on which average channels have respondent chosen, as their responds differ greatly. While some 38.4% of households used credit cards for their purchase, some 44.2% claimed not to have used credit cards. Further examination shows that only a minority of households, 21% had taken loan from finance companies, 20.2% took loan from friends and relatives, and another 20.2% had bank overdraft.

Section E1a: Purpose of Loan

Table 7: Purpose of Loan

	Percentage
Houses	31.6%
Car	16.7%
Personal	11.6%

Education	8.3%
Daily Household Expenses	18.3%
Others(business, baby, wedding, medical)	13.3%

Table 7 provides further explanation to the reasons of requiring a loan over the last 12 months. Around 31% of the respondents borrowed money to invest in the construction and renovation of their houses. A quite significant percentage (18.3%) borrowed money to meet their daily household expenses, and around 16.7% have debts due to car loans.

Section E2

Table 8: Amount owe on financial commitments

	Amount		Monthly Servicing	
	Mean	**Standard Deviation**	**Mean**	**Standard Deviation**
Rent / mortgage	776,000.00	1217026.887	18,933.33	21690.355
Hire Purchase	74,840.00	201739.246	3,127.50	3347.642
Loans from banks	496,071.43	671350.601	7,967.74	5814.028
Loans from individuals	101,666.67	81668.213	5,400.00	8264.381
Bank overdrafts	44,625.00	32509.065	3,500.00	2121.320
Credit cards	34,828.00	38299.560	4,916.67	5530.220
Advances from relative/friends	52,350.00	105543.053	2,400.00	4253.822
Loans from credit union/ provident fund	291,352.94	357204.238	7,566.67	6172.115
Government support loans	284,166.67	293178.764	6,983.33	3168.859
Other sources of loan	379,384.62	350145.098	8,193.75	6161.310

In a household, it is important to look at the distribution of debt across the different financial commitments. This will help to quantify to what extent households are exposed to the risks of high indebtedness depending on the riskiness of the financial services. Respondents on average owe an amount of Rs776,000 to mortgages and the monthly servicing of the debt is around 18, 933 on average. Mortgage represents the highest amount which increases households' debts. Loan from banks also represent a considerate amount that households need to disburse each month to repay debts ($\bar{x}$ = 7967.74, *SD* = 5814.028).

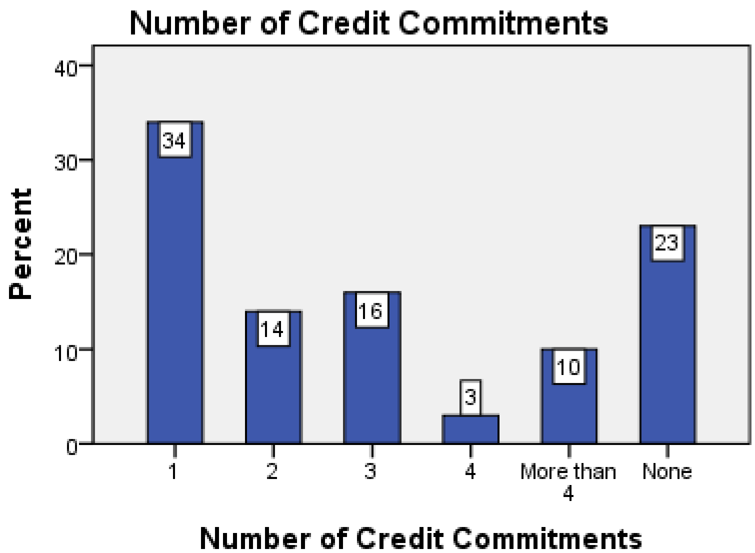
Section E3

Table 9: Debt structure

	Amount of debts		Monthly Servicing	
	Mean	**Standard Deviation**	**Mean**	**Standard Deviation**
Household appliances	28,055.56	45216.437	2309.09	1221.028
Audio-visual equipment	13,600.00	8614.478	833.33	578.792
Furniture	44,176.47	46693.462	1860.00	1381.786
Motor vehicles	316,550.00	334678.396	7138.89	4498.457
Housing	475,454.55	562221.167	6678.57	5029.173
Education	167,026.32	238821.090	6335.91	6296.045
Medical Care	88,000.00	140951.313	4320.00	3607.215
Wedding loans	54,175.00	97267.616	4166.67	763.763
Unsecured Loans	98,333.33	93852.722	8133.33	10278.781
Gambling	62,611.11	127528.374	5166.67	4752.192
Travel and vacations	62,285.57	61602.964	2625.00	1973.787
Other personal loans	206,714.29	194076.200	3483.33	2538.044

Not surprisingly, shifting attention to the distribution of debts across the different purposes of the loans, show that housing remains the main the component in the respondents' debt structure and on average, the amount of debts raise to Rs 475,454. Other high level of debts among the respondent consist of investing in motor vehicles and financing education among others.

Section E4: Number of credit commitment



We see that 10% of the respondents have 4 or more credit commitments, which is the conventional over-indebtedness indictor based on credit commitments. Though most of them (34%) claimed to have only 1 credit commitment and around 23% do not have any.

Section E5: Arrears

Table 10: Household arrears on credit commitment or household bills

	1	2	More than 2	None
Utility bills is behind	14.0%	11.6%	10.9%	63.6%
Credit cards repayments problems	15.5%	1.6%	4.7%	78.3%
Borrowing repayments problems	13.1%	4.6%	7.7%	74.6%

Table 10 examines what proportion of households is in arrears of more than two credit commitments or household bills which measures 'indebtedness'. Over half of these individuals do not have any bills or commitments in arrears. In addition, an even smaller proportion (10.9%) has arrears of more than two bills. A comparison with Tables 9 and 10 suggests that households do not owe excessive credit commitments and are not in arrears with at least two utility bills.

Section E6: Debt to income ratio

Table 11: Debt to Income Ratio

	Mean	Standard Deviation	Range	Frequency	%
Unsecured debt repayment to income ratio	11.65	15.588	45	11	7.60%
Total debt repayment to income	51.43	10.293	25	7	4.86%

Over-indebtedness based on the repayment-to-income ratios is lowest of all, indicating that 7.60% of households made unsecured debt repayments amounting to more than 25% of gross household income, and 4.86% made total debt repayments of more than 50% of income. This figure is lower than the arrears or number of credit commitment indicators. This reality however is more complex as a large proportion of households did not report on these two indicators, it make it difficult to draw conclusion.

Section E7.1:

Table 12: Household Managing Financially

	Mean	Standard Deviation	Skewness	Kurtosis	Manage very well	Dont manage very well	Neutral	Have some financial difficulties	Are in deep financial trouble
Households financial management	2.72	1.261	-.120	-1.215	27.0%	11.3 %	29.8 %	27.0%	5.0%

The first subjective question asked to the respondent was how their families and themselves are managing financially these days. A spectrum of potential responses from ‘manage very well’ through to ‘are in deep financial trouble’ was then provided. Table 12 presents some 43.3% of families reported that they ‘don’t manage very well’, or ‘have some financial difficulties’ or ‘are in deep financial trouble’, which can be interpreted as respondents who are suffering from some degree of financial burden. Only 5% have deep heavy financial burden and 27% of them consider managing their financial commitments very well.

Table 13: Hardness to repay debts

	Mean	**Standard Deviation**	**Skewness**	**Kurtosis**	**Never**	**Rarely**	**Occasionally**	**Quite Often**	**Very Often**
Hardness in repaying debts over past 12 years	2.58	1.237	.384	-.821	22.7 %	29.1%	24.1%	15.6 %	8.5%

Respondents were also asked how often they found it hard to repay their debts over the last one year. As before there is a range of possible answers that is provided and in this case 24.1% of respondents reported trouble in repaying debts to be ‘very often’ or ‘quite often’. This can be identified as being families with persistent debt problems.

Section E8:

Table 14: How long to cover living cost expenses if main source of income is lost (without borrowing)

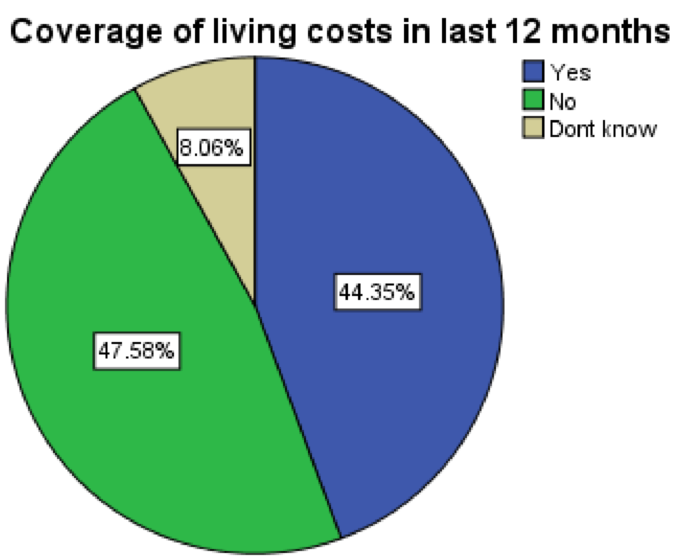
	Mean	**Standard Deviation**	**Skewness**	**Kurtosis**	**Less than a week**	**At least a week but not one month**	**At least one month but not three months**	**At least three months but not six months**	**More than 6 months**
How long to	3.35	1.190	-.314	-.724	8.1%	15.4%	28.7%	28.7%	19.1%

cover living expenses if lost main source of income	

This question gives details about financial hardship of the households. Respondents were asked: how long would they be able to cover their living expenses if their main source of income was lost (without borrowing). Again we find that a relatively high proportion of households report that they can cover their living expenses at least one month but not three months (52.2%). In contrast, only around 19% of households report that they can cover their living cost more than 6 months without borrowing.

Section E9: Income does not cover cost of living in the last 12 months

Figure 9



In this subsection, respondents were asked whether in the last 12 months they found that their income was not enough to cover their living costs. A majority of the respondents (47.6%) did not agree to the statement and a relatively close percentage (44.4%) agreed to have been faced with the situation where their income was not able to cover their living costs. The next table provides further clarification on what did the respondents do to meets their needs the last time it happened.

Section E10.

Table 15: How to cover living costs when income is not enough

	Mean	Standard Deviation	Skewness	Kurtosis	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Money out/transfer from savings to current account	3.49	1.136	-1.001	.293	10.5%	7.0%	17.5 %	52.6 %	12.3%
Cut back on spending, spend less, do without	3.83	1.069	-1.226	1.397	6.8%	3.4%	15.3 %	49.2 %	25.4%
Sell something that I own	2.81	1.503	.298	-1.392	23.7%	28.8%	11.9 %	13.6 %	22.0%
Work overtime	3.63	1.275	-.689	-.590	8.3%	13.3%	15.0 %	33.3 %	30.0%
Borrow food	2.69	1.453	.278	-1.321	28.8%	22.0%	15.3 %	18.6 %	15.3%
Borrow from employer/salary advance	2.64	1.447	.452	-1.151	27.6%	27.6%	15.5 %	12.1 %	17.2%
Pawn something than I own	2.41	1.338	.646	-.633	32.8%	24.1%	24.1 %	6.9%	12.1%
Take a loan from club	2.43	1.307	.410	-1.215	31.7%	28.3%	10.0 %	25.0 %	5.0%
Money out of flexible mortgage account	2.26	1.250	.826	-.381	32.8%	36.2%	10.3 %	13.8 %	6.9%
Apply for loan/withdrawal from pension fund	2.49	1.428	.514	-1.141	33.3%	26.3%	10.5 %	17.5 %	12.3%
Use authorised, arranged overdraft or line of credit	2.26	1.264	.731	-.525	36.2%	27.6%	17.2 %	12.1 %	6.9%
Use of credit card	2.83	1.416	.009	-1.455	25.0%	21.7%	10.0 %	31.7 %	11.7%
Take out personal loan	2.58	1.276	.185	-1.243	27.1%	23.7%	18.6 %	25.4 %	5.1%
Take out a	2.45	1.287	.579	-.773	27.6%	32.8%	15.5	15.5	8.6%

payday loan							%	%	
Take out a loan/ moneylender	2.27	1.243	.821	-.330	32.1%	35.7%	12.5%	12.5%	7.1%
Use unauthorised overdraft	2.03	1.139	.964	.064	41.4%	31.0%	13.8%	10.3%	3.4%
Pay bills late/ miss payment	2.88	1.340	.001	-1.239	20.3%	22.0%	18.6%	27.1%	11.9%

On average, the relevant respondent agreed to have cut back spending and spend less when they found that their income would not be enough to cover their living costs ($\bar{x}$ = 3.83, *SD* = 1.069). And not surprisingly, the use of unauthorized overdraft were the least preferred choice ($\bar{x}$ = 2.03, *SD* = 1.139).

Section F

Table 16: Assessing Attitude of Respondent

	Mean	**Standard Deviation**	**Skewness**	**Kurtosis**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Taking loan make life better	3.10	1.239	-.235	-.914	14.1%	16.9%	26.8%	29.6%	12.7%
Have something now and pay later	3.05	1.142	-.069	-.949	8.5%	27.7%	23.4%	31.2%	9.2%
Have debt is never good thing	3.81	1.078	-.818	.162	4.2%	7.7%	20.4%	38.0%	29.6%
Credit is essential part of today's lifestyle	3.48	1.018	-.652	-.001	5.0%	12.1%	25.5%	45.4%	12.1%
Important to live	4.08	1.001	-.940	.033	.7%	9.9%	12.1%	35.5%	41.8%

within one's means									
I am not worried of having debt	2.48	1.261	.477	-.901	26.3%	32.1%	16.1%	18.2 %	7.3%
I like having credit card	2.76	1.177	-0.013	-0.940	18.7%	21.6%	30.2%	23.7 %	5.8%
I do not like borrowing money	3.88	1.081	-.962	.421	4.3%	7.2%	16.7%	39.1 %	32.6%
Prefer to save for making an expensive buy	3.35	1.259	-0.551	-0.760	12.3%	13.8%	17.4%	39.9 %	16.7%
Better go into debt	2.64	1.253	.461	-.748	19.3%	32.9%	23.6%	12.9 %	11.4%
Even a low income, I save a little regularly	3.49	1.069	-.822	.234	7.9%	7.9%	25.0%	46.4 %	12.9%
Borrowed money should be repaid as soon as possible	4.01	1.063	-1.145	.928	4.3%	5.0%	15.0%	37.1 %	38.6%

An interesting question, which the study explores, is determining the psychological and behavioral characteristics of the respondents. On average, respondents (77.3%) agreed that it is important to live within one's one means ($\bar{x}$ = 4.08, *SD* = 1.261). It is also important to noted that over half (58.4%) of them are worried of having debts and 71.7% do not like borrowing money while a small percentage (25.6%) are not worried about having debts. Most of the respondents (59.3%) make regular savings, and only 15.8% don't like to save with a low income.

Section F2.2

Table 17: Assessing locus of control

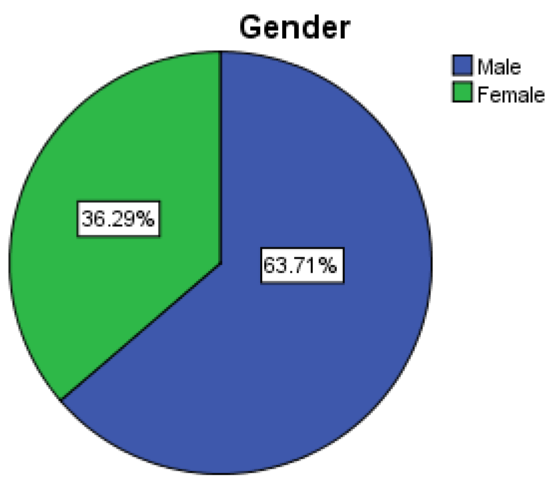
	Mean	Standard Deviation	Skewness	Kurtosis	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am almost certain that I can make my plans works	3.44	1.014	-.633	.249	6.3%	7.7%	33.8%	40.1%	12.0%
What happens to me is my own doing	3.63	.979	-.660	.271	3.5%	8.5%	26.8%	44.4%	16.9%
Doing things right way depends on ability not luck	3.69	1.015	-.669	.134	3.5%	8.5%	24.8%	41.8%	21.3%
Unhappy things in people's lives partly due to bad luck	2.83	1.177	.283	-.673	12.8%	29.1%	31.9%	14.9%	11.3%
Getting a good job depends mainly on being in the right place at the right time	3.48	1.073	-.534	-.338	5.0%	14.2%	24.1%	41.1%	15.6%
Many times I feel that I have little influence over things that happen to	3.21	1.114	-.337	-.471	9.2%	14.2%	34.0%	31.2%	11.3%

me

The respondent for the most part agreed that they are solely responsible to whatever happen on their lives. The statement which most of the respondents (63.1%) agreed to is that by doing things the right way upon their ability, luck has nothing to do with it ($\bar{x}$ = 3.69, *SD* = 1.015). While the least percentage around 26.2% believe that unhappy things in people's live is partly due to bad luck ($\bar{x}$ = 2.83, *SD* = 1.177).

Section G

Figure 10



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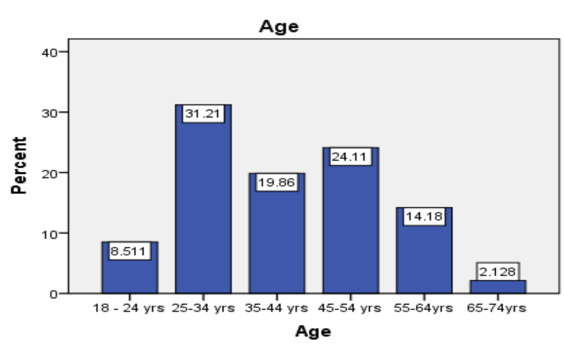
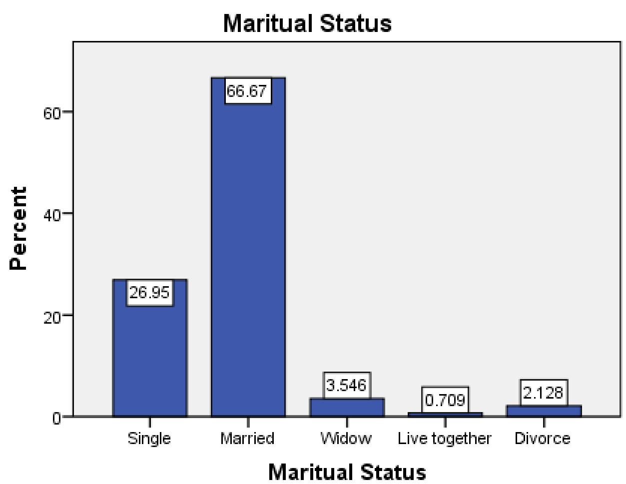
Most of the respondent are Male who account for 63.7% of the sample and in minority is Female accounting for 36.3% of the respondents.

Figure 11



With respect to the specificity of the subject, a majority of the respondents are in the working-age group. Some 8.5% possibly represents the recent graduates currently working or looking for jobs, while as low as 2.1% represents the retirees.

Figure 12



In the sample, it is noted that 66.7% of the respondents are married and around 30% are single.

Table 18: Composition of Household

	Mean	Standard Deviation
Number of family members	3.82	1.229
Number of dependent children	1.53	.955
Number of members in family have a job	1.82	.764

On average, it can be noted that per family the highest number of family members was 4, and the number of dependent children stood at 2 per household. In a household there is on average two income earners.

Figure 12

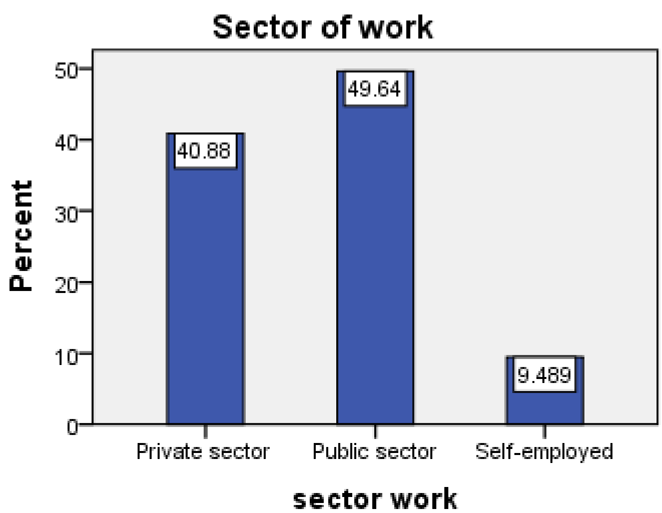
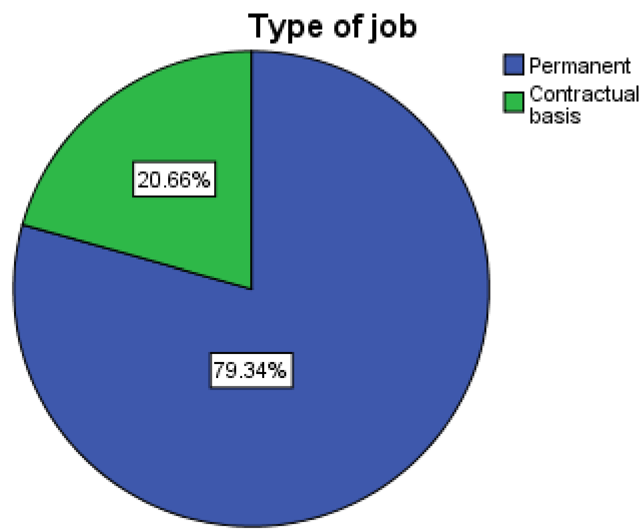
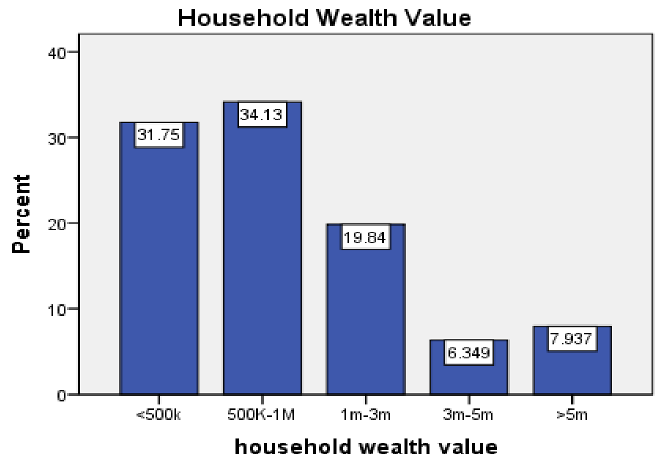


Figure 13



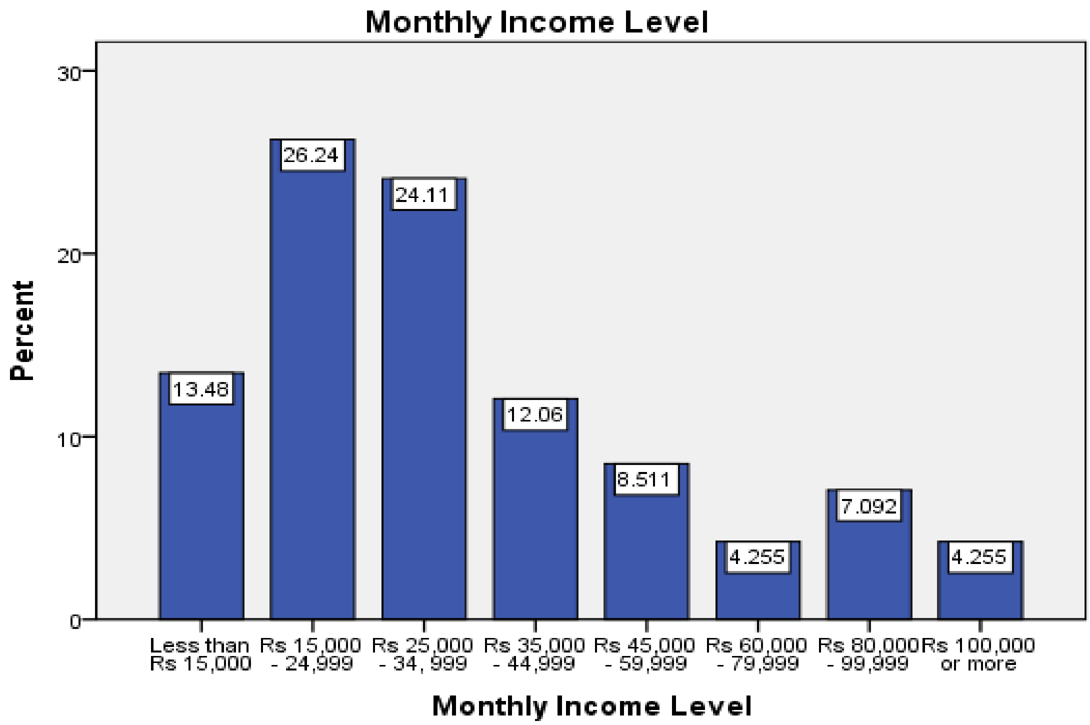
Respondents are employed mostly in the public sector (489.6%) and of the respondent, 77.3% have a permanent job.

Figure 14



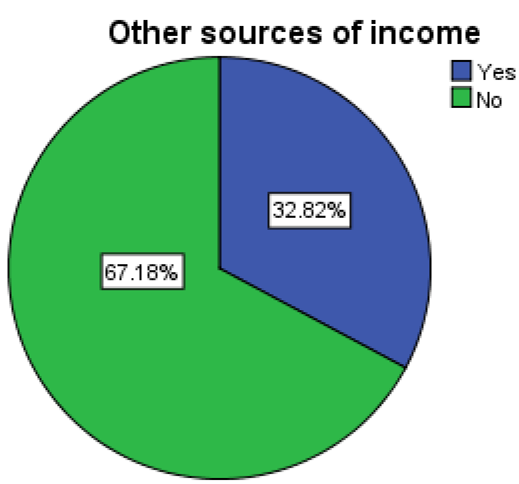
On average, most respondent household’s wealth value stood between Rs500,000-Rs1 million.

Figure 15



Looking at the monthly income of the respondent, most of them (26.2%) have an earning between Rs 15,000 - Rs 24,999. This is followed by 24.11% of the sample population, being from the earning bracket of 'Rs 25,000-Rs34,999'.

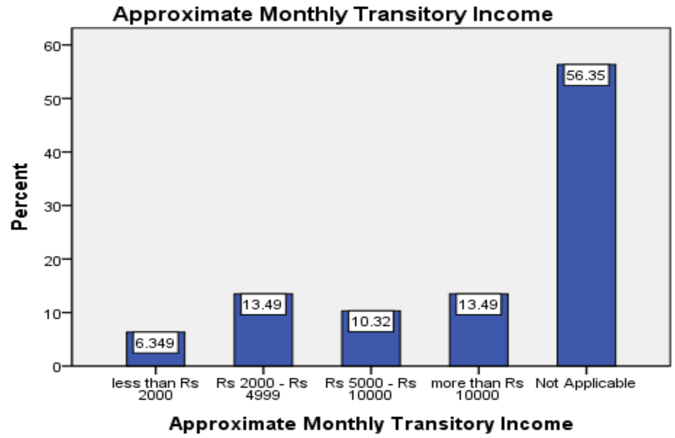
Figure 6



Respondent were also asked whether they have other sources of income. Only a minority of them (32.8%) agreed to have other transitory income over and above their basic salary.

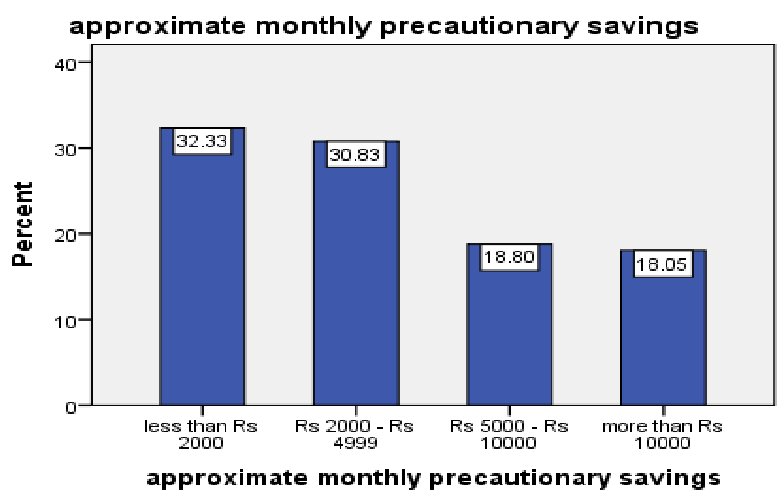
Transitory income

Figure 17



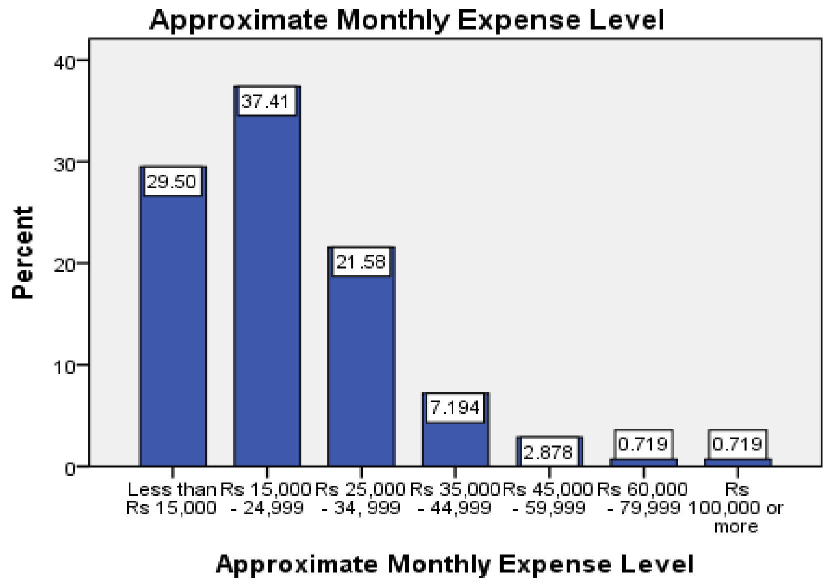
Part time job is the most common (16.1%) transitory income of the 32.8% of the respondent who have transitory income.

Figure 18



As seen earlier, repondents are willimg to save and perceive saving as a good practice. Here also, similar results is found where 32.1% of the respondent save around less than 2000, and 30.6% save between Rs 2,000-Rs4,999 on a monthly basis.

Figure 19



Most of the respondents (37.4%) monthly expenditure range between Rs15,000-Rs 24,999.

Table 19: Household Expenses

Household Expenses	**%**	
	Yes	No
Household Consumables	96.5	3.5
Transport	62.4	37.6
Utilities	59.6	40.4
Educational Expenses	51.1	48.9
Medical Expenses	44.7	55.3
Cigarettes/Alcohol	17.7	82.3
Gambling	9.9	90.1
Others	3.5	96.5

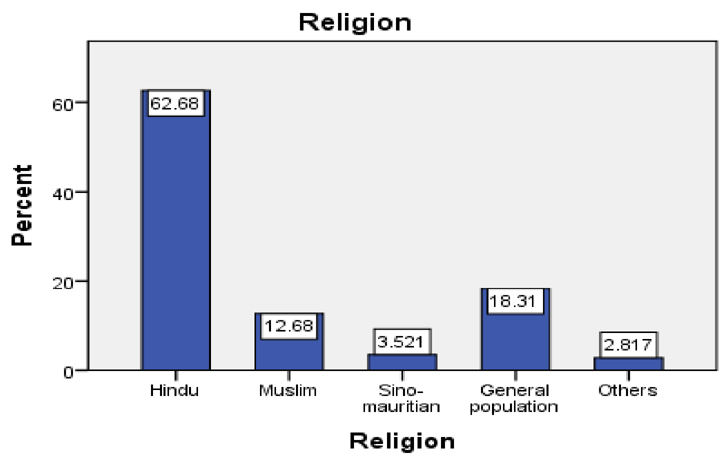
And their household expenditure consist mainly of, consumables (96.5%), transport (62.4%), paying utility bills (59.6%), education (51.1%) and medical expenses (44.7%).

Table 20:

Constituency	Flacq	Grand Port	Moka	Pamplemousses	Plaines Wilhems	Port Louis	Riviere du Rempart	Riviere Noire	Savanne
Frequency	13	11	19	8	62	10	7	2	9
Valid Percent	9.2	7.8	13.5	5.7	44.0	7.1	5.0	1.4	6.4

From the above table, it can be clearly noted that most of the respondent comes from the Plaines Wilhems constituency.

Figure 20



The sample of the survey consists of 62.7% of Hindu and the second largest group is the general population.

5.2 Exploratory Factor Analysis Results (EFA)

Exploratory factor analysis was conducted to identify important factors related to causes of household indebtedness. Twenty one items were initially set to measure the drivers of household indebtedness. Both the Kaizer-Meyer-Oklin Measure of Sampling Adequacy (.821> 0.5) and the Bartlett's test of sphericity (0.000 < 0.005, at 5% level of significance) indicated that the data was appropriate for EFA analysis. The results extracted five factors which accounted for a total of 68.66% of variance explained.

EFA resulted in the deletion of three items. "Flashy life style" and "Inability of coping with expenses" were deleted because of double loadings and the third item "Financing education" was deleted because no result was found.

Table 21: EFA for Causes of Household Indebtedness

Scale items/Factors	Personal Reasons	Investment and Financial Assistance	Habits and Addictions	Earnings	Macroeconomic Shoks
Family breakdown	.834				
Death of family member	.823				
A new born baby in the family	.708				
Unemployment	.673				
Wedding	.629				
Illness	.561				
Flashy life style	.554	.541			
Financial investment		.862			
Provide financial assistance to a family		.810			
Business physical investment		.790			
Lack of ability to manage finance correctly			.691		
Cigarettes / alcohol			.673		
Over borrowing			.636		
Peer Pressures			.630		
Gambling			.591		
Financial exclusion				.779	
Persistent low income				.763	
Inability of coping with expenses			.529	.598	
Increase in cost of living					.871
High prices of real estates					.778
Financing education					
Eigenvalue	7.215	3.137	1.687	1.372	1.007
Variance Explained (68.66%)	19.89**%**	15.16**%**	14.78 **%**	9.855**%**	8.97**%**
The Kaiser-Meyer-Olkin measure of sampling adequacy	.821				
The Bartlett's test of sphericity (significance level)	.000				

Factor 1: Personal Reasons

Factor 1 explained 19.9% of variance and was termed “ Personal Reasons”. It contained six items having factor loadings ranging from 0.561 to 0.834. Four observed variables related to household shocks such as “Family breakdown”, “Death of family member”, “Unemployment” and “Illness”. The remaining two items related to a new step in the life cycle namely, “A new born baby in the family" and "Wedding". One item "Flashy life style" was deleted from the scale due to high cross loadings.

Factor 2: Investment and Financial Assistance

Factor 2 was labeled "Investment and Financial Assistance" and it constituted of three items. Variables included "Financial investment", "Provide financial assistance to a family" and "Business physical investment". This factor explained 15.16% of variance and factor loadings ranged from 0.790 to 0.862.

Factor 3: Habits and Addictions

The third fact explained 14.78% of variance and was termed as "Habits and Addictions". It comprised of five variables which relate to inability to correctly make financial decision due to bath internal and external forces. "Lack of ability to manage finance correctly", "Cigarettes / alcohol", "Over borrowing", "Peer Pressures" and "Gambling" were among them. One item "Inability of coping with expenses" was deleted from the scale due to high cross loadings on two factors.

Factor 4: Earnings

Factor 4 " Earnings" explained 9.855% of variance in the scale and it comprised of two items "Financial exclusion" and "Persistent low income" having loadings of 0.779 and 0.763 respectively.

Factor 5: Macro Economic Shocks

The last factor explained 8.97% of variance and is labeled "Macro Economic Shocks". It includes two items "Increase in cost of living" and "High prices of real estates" with factor loadings of 0.871 and 0.778 respectively.

FURTHER ANALYSIS

EFFECTS OF DEMOGRAPHIC VARIABLES ON LEVEL OF INDEBTEDNESS

- **Gender Differences and Level of Indebtedness**

Descriptive statistics were computed to assess potential differences between men and women with regards to the indicators of indebtedness. It was observed that on average there were only slight differences between male and female respondents with respect to the first two indicators, namely, ability to management household finance and hardness in repaying debts over the past 12 years. A more substantial difference was noted with regards to the third indicator, namely, time period that the household would be able to meet its expenses if the main source of income was lost. The mean value for male respondents for this third indicator was 3.19 for male respondents and 3.9 for female. Some further analysis was conducted to test for the significance of these results.

	Male			Female		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation
Households financial management	2.63	78	1.270	2.59	44	1.263
hardness in repaying debts over past 12 years	2.56	78	1.223	2.36	45	1.209
How long to cover living expenses if lost main source of income	3.19	77	1.246	3.79	43	.965

Testing for Differences between Gender with regards to Level of Perceived Indebtedness

H_{1a}: There is a significant difference between male and female individuals with regards to households financial management

H_{1b}: There is a significant difference between male and female individuals with regards to hardness in repaying debts over past 12 years

H_{1c}: There is a significant difference between male and female individuals with regards to expected time period required to cover living expenses in case of losing main income source.

Table 22:Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Households financial management	Equal variances assumed	.033	.857	.156	120	.876	.037	.239	-.436	.511
	Equal variances not assumed			.156	89.721	.876	.037	.239	-.437	.511
hardness in repaying debts over past 12 years	Equal variances assumed	.107	.745	.915	121	.362	.209	.228	-.243	.660
	Equal variances not assumed			.918	92.809	.361	.209	.227	-.243	.660
How long to cover living expenses if lost main source of income	Equal variances assumed	4.414	.038	-2.712	118	.008	-.596	.220	-1.031	-.161
	Equal variances not assumed			-2.913	105.909	.004	-.596	.205	-1.001	-.190

Table 23: Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Households financial management	Male	78	2.63	1.270	.144
	Female	44	2.59	1.263	.190
hardness in repaying debts over past 12 years	Male	78	2.56	1.223	.138
	Female	45	2.36	1.209	.180
How long to cover living	Male	77	3.19	1.246	.142

expenses if lost main source of income	Female	43	3.79	.965	.147

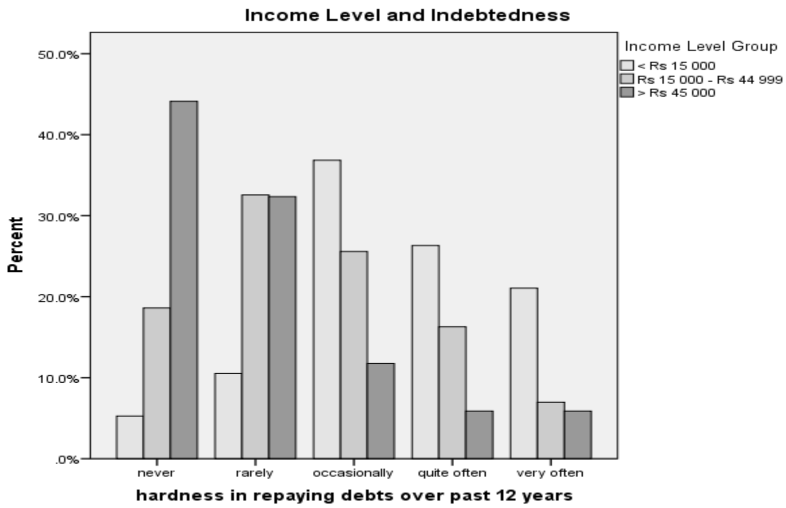
Only, hypothesis (H_{1c}) concerning expected time period required to cover living expenses in case of losing main income source was supported with a significance value less than the 5% level. The male group (N=77) had a score of M=3.19 with regards to the length of time to cover living expenses if they lost their main source of income. By comparison, the mean score for female group was higher (M=3.79). To test the hypothesis that male and female respondents had statistically significantly different mean perception of required time period, an independent-samples t test was performed.

The male and female distributions were sufficiently normal for the purposes of conducting a t test. Moreover, the assumption of homogeneity of variances was tested and was not satisfied via Levene's F Test, F (118) = 4.414, p= 0.038. Therefore the adjusted scores were used.

The independent-samples t test was associated with a statistically significant effect, t(118) = -2.913, p = 0.004. Thus, the mean score for male was statistically significantly lower than the mean score for female individuals. In other words, the expected time period to cover living expenses in case of loss of main in come source is lower for male.

- **Income Level Differences and Level of Indebtedness**

Individuals having higher income level are expected to be less over indebted. The preliminary descriptive analysis showed that this was the case among the surveyed respondents. As illustrated in the clustered bar chart below, respondents earning less than Rs 15 000 were the won facing the greatest amount of difficulty in paying their debts.



Testing for Differences between Income Levels with regards to Level of Perceived Indebtedness

Further analysis was conducted to find out whether the differences between income level groups were statistically significant.

H_{2a}: There is a significant difference between individuals of diverse income levels with regards to households' financial management.

H_{2b}: There is a significant difference between individuals of diverse income levels with regards to hardness in repaying debts over past 12 years.

H_{2c}: There is a significant difference between individuals of diverse income levels with regards to expected time period required to cover living expenses in case of losing main income source.

Refer to Appendix B: Multiple Comparisons

The descriptive statistics associated with perceived level of indebtedness across the five income levels are reported in the table above. In order to test the hypothesis that income difference had an effect on perceived level of indebtedness, one-way between-groups ANOVA was performed. Prior to conducting the ANOVA, the assumption of normality was evaluated and determined to be satisfied as the five groups' distributions were associated with skewness and kurtosis less that $|2.0|$ and $|9.0|$, respectively (Schmider et al., 2010). The assumption of homogeneity of variances was tested and was satisfied, based on Levene's F Test. The independent between-groups ANOVA yielded a statistically significant effect, $p < 0.05$. Thus the null hypothesis of no differences between the means was rejected. To evaluate the nature of the differences between the five means further, the statistically significant ANOVA was followed up with a multiple comparison test using Tukey HSD. This additional test showed that for the most significant differences were between individuals earning less than Rs. 15 000 and the other income groups.

- **Financial Literacy and Level of Indebtedness**

Testing for relationship between knowledge of financial products and level of indebtedness

It was further hypothesized that knowledge of financial products would have a positive effect on level of debt. An EFA was first conducted so as to reduce the dimensions of financial products knowledge. As shown below EFA suggested the existence of three factors.

Table 24: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.968	46.454	46.454	6.968	46.454	46.454	3.536	23.573	23.573
2	1.697	11.316	57.770	1.697	11.316	57.770	3.168	21.121	44.695
3	1.092	7.281	65.051	1.092	7.281	65.051	3.053	20.356	65.051
4	.981	6.541	71.592						
5	.843	5.618	77.210						
6	.740	4.936	82.146						
7	.588	3.917	86.063						
8	.472	3.146	89.209						
9	.369	2.462	91.672						
10	.305	2.037	93.708						
11	.263	1.754	95.462						
12	.227	1.511	96.973						
13	.181	1.208	98.180						
14	.164	1.092	99.273						
15	.109	.727	100.000						

Extraction Method: Principal Component Analysis.

Table 25: Rotated Component Matrix[a]

	Component		
	1	2	3
Bonds	.836		
stocks and shares	.743		
mobile phone payment account	.717		
prepaid payment card	.714		
investment account	.579		
microfinance loan	.512		
pension fund			
bank loan secured on property		.771	
unsecured bannk loan		.766	
Mortgage		.714	
credit card		.680	
savings account			.868
term of deposit account			.819
current account			.734
Insurance			.572

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

A regression analysis was then conducted. As shown below, 10.5% of variance in level of perceived indebtedness was explained by knowledge of financial products. The overall regression model was also found to be significant at the 5% level of significance ($p<0.05$).

Table 26: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.323[a]	.105	.084	1.135

a. Predictors: (Constant), Factor 3, Factor 1, Factor 2

Table 27: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.689	3	6.563	5.098	.002[b]
	Residual	168.637	131	1.287		
	Total	188.326	134			

a. Dependent Variable: How long to cover living expenses if lost main source of income

b. Predictors: (Constant), Factor 3, Factor 1, Factor 2

Table 28: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.651	.423		6.266	.000
	Factor 1	.408	.124	.337	3.296	.001
	Factor 2	.100	.147	.079	.682	.497
	Factor 3	-.215	.144	-.166	-1.496	.137

a. Dependent Variable: How long to cover living expenses if lost main source of income

Factor 1 which could be term as financial markets instrument literacy was the only significant predictor of indebtedness level at the 5% level of significance with a significance value of 0.001 and had the greatest explanatory power with a beta value of 0.337. The above result calls for deeper analysis which is outside the scope of this research. It thus leaves an avenue for future research.

6.0 CONCLUSION AND IMPLICATIONS

The objective of this research was to produce quantitative evidence from data collected through the survey in order to assess the level of household indebtedness in Mauritius. The civil societies and the Bank of Mauritius have already been signaling this worrying financial state of the Mauritian household and this research have particularly attempted to extend the knowledge about ways of measuring financial difficulty and over-indebtedness of households.

In our sample, we found that a significant majority of the respondents (85.1%) are concerned about their current level of debts. Consistent with previous studies, factors that consistently trigger households into potential debt problems and increase the risk of over-indebtedness were found to be: the increase in cost of living, the rise in the price of real estate, financing education, persistent low income, inability of coping with expenses and obtaining debts on hire purchase. Overall, the consequences of high indebtedness was more inclined towards the adverse economic shocks that the country may face in terms of financial instability, families struggling to meet basic needs. Though the social impact was less likely recognised, to act immorally and commit fraud and corruption in the society, alcoholism, stress, and family breakdown were among the most elected consequences of the respondent. And as possible solutions to reduce and mitigate the risk of having excessive debts, on average, a higher proportion of the respondents agreed that individuals should be provided with meaningful and appropriate information when taking loans.

The uniqueness of the study lies in measuring the current level of over-indebtedness. The study uses different over-indebtedness indicators as each one of them represent different dimensions of credit behaviour. As a consequence, there still exists the risk of overlapping of the indicators where household may be scoring positively on at least one of the indicators. The evidence shows a difference between the objective and subjective indicators where around 10% of the households do not owe excessive credit commitments and are not in arrears with at least two utility bills. While only 5% have deep heavy financial burden and 24.1% of respondents can be identifies as having persistent debt problems as they reported being 'very often' or 'quite often' in trouble in repaying debts. Prospects for future research is substantial, a long run analysis can be conducted to see whether the current debt problem leads to further arrears and hardness to pay debts, or whether remedies provided to indebted households have been useful.

The negative impact of over-indebtedness is far reaching irrespective of the underlying reason for same. And Mauritius is not the only country facing such a dilemma which unfortunately very often is a major cause for suicide, family break downs and societal rejection. In this regard, and very interestingly, the Council of Europe (2007) has recommended a series of measures for Governments to adopt in their attempt to curb increasing debt levels. These has been categorized as i) preventive measures (encompassing financial literacy, budgeting advice, responsible lending and information for borrowers) ii) remedial measures (such as protected earnings, debt adjustment and realistic repayment plans) and iii) rehabilitative measures (including elements such as debt write-offs, and the right to a 'fresh start' and a clean state as a credit user).

In order to prevent over-indebtedness occurring in the first place, or at least to minimise the chances of it happening, a greater emphasis needs to be placed on prevention. Income and asset adequacy measures are crucial to ensure that people have sufficient resources to manage on and to repay debt in the first place. The evidence suggests that increasing the resources of those on lower incomes (net income, disposable income and savings) in line with their needs is the most likely way to reduce the incidence of over-indebtedness. In terms of the tools to manage these resources, more appropriate financial tools such as banking, credit, savings and insurance products, tailored to people's needs, are required for people currently excluded from accessing and using basic financial services i.e. those most at risk of over-indebtedness. People also require the skills and knowledge to avail of these services.

Education and skills programmes on responsible borrowing and money management should also complement the above and be more comprehensively incorporated within the school curriculum. Similar programmes should be targeted at "at risk" adults such as those with literacy difficulties and other marginalised groups. The media remains an effective way to support the above with dedicated broadcasts and sensitization programmes. This can be complemented with frequent and daily flash information campaigns on financial products implications and indebtedness. Interestingly the social media and websites (administered by dedicated resources) remain a penetrating tools to educate and sensitize the population on the over indebtedness issue.

It is believed that greater emphasis is required on the social rationale for regulation. An explicit, legal duty should be placed on all lenders to lend responsibly. Loans granted without thorough checking of a potential borrower's capacity to repay should be legally enforceable as is the case for Belgium (it goes to the extent that the credit institution would not be legally entitled in such circumstances to recover the money it has loaned). A corresponding duty should also be placed on potential borrowers to provide the necessary information requested by lenders to enable such checks to be properly made (again as in Belgium). To facilitate these, a more inclusive data sharing system is required.

Codes of practice and guidelines on arrears management and recovery should be more widely developed for different types of arrears and harmonised to ensure that people with different types of debt problems, are treated fairly, equitably and appropriately. Close consultation with a range of stakeholders is important to ensure that the experience of consumers is taken into account in the development of such codes and that it acceptable by everyone. Specific provisions to deal with vulnerable consumers are particularly important. Independent monitoring and swift enforcement mechanisms, whilst allowing for due process, are also crucial to ensure compliance with these codes and guidelines. Without such monitoring and enforcement, codes are unlikely to be as effective as they might be.

Finally, where over-indebtedness does occur, independent money advice services, statutorily recognised, have an important role to play. The creation of an association of 'indebtedneers' could here be of particular importance as such association may assist and accompany those engaging in debts for which they may not have the knowledge or capacity to evaluate and understand.

Moreover, in time of recessions for instance, services need to be bolstered to deal with increased demands and to enable staff within them to cope with increased workloads. Judicial or legally-backed schemes such as debt settlement should be established. The purpose of these schemes would be to facilitate the rehabilitation of debtors who have undergone adverse shocks or changes in circumstances.

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Appendix A: Questionnaire

HOUSEHOLD INDEBTEDNESS:

AN ANALYSIS OF ITS DETERMINANTS AND IMPLICATIONS

Questionnaire #: ………………..

1. **'How concerned are you about your current level of debt?'**

Very Much	Much	Moderately	A little	Not at all
5	4	3	2	1

2. **Did you have to prioritize your monthly expenditure due to indebtedness recently?**

Yes No

SECTION A: CAUSES OF HOUSEHOLD INDEBTEDNESS

The following items relates to potential causes of indebtedness. In your case indicate your disagreement or agreement with respect to the following causes by marking the appropriate response category

		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1.	Persistent low income					
2.	Inability of coping with expenses (overspend)					
3.	Financial exclusion (w.r.t. Access to finance)					
4.	Lack of financial Literacy wrt: Financial Planning To changes in interest rates (Cost of borrowing) Other loan Conditions (penalties etc)					
5.	Lack of ability to manage finances correctly					
6.	Ease of Obtaining Debts: Hire Purchase Credit cards Unsecured bank loans Long term loans Leasing Credit Union/Provident funds					

7.	Over borrowing					
8.	Peer pressures					
9.	Unemployment					
10.	Illness (e.g. expensive medical care),					
11.	Family breakdown (Divorce)					
12.	A new born baby in the family					
13	Death of a family member (income earning)					
14	Increase in the cost of living					
15.	High prices of real estates					
16.	Gambling					
17.	Flashy life style (night clubs/pubs)					
18.	Financing Education					
19.	Cigarettes /Alcohol					
20.	Wedding					
21.	Business physical investment					
22.	Financial investment					
23.	Provide financial assistance to a family/friend					
24.	Others (House/invest in home)					

Section B: ASSESSMENT OF FINANCIAL LITERACY

B1. To what extent do you agree with the following statements (1 to 5 where 1 is strongly disagree and 5 strongly agree):

		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1.	An investment with a high return is likely to be high risk					
2.	If someone offers you the chance to make a lot of money there is also a chance that you will lose a lot of money.					
3.	High inflation means that the cost of living is increasing rapidly.					
4.	It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares.					
5.	It is less likely that you will lose all of your money if you save it in more than one place.					
6.	Each household should engage in a proper budget.					

B2. How would you rate your knowledge of the following financial products (very low(1) to very high(5))

		Very Low	**Low**	**Neutral**	**High**	**Very High**
1.	A pension fund					
2.	An investment account, such as a unit trust					
3.	A mortgage					
4.	A bank loan secured on property					
5.	An unsecured bank loan					
6.	A credit card					
7.	A current account					

8.	A savings account					
9.	A term deposit account					
10.	A microfinance loan					
11.	Insurance					
12.	Stocks and shares					
13.	Bonds					
14.	Mobile phone payment account					
15.	Prepaid payment card					

Source: OECD INFE (2011) Measuring Financial Literacy: Core Questionnaire in Measuring Financial Literacy: Questionnaire and Guidance Notes for conducting an Internationally Comparable Survey of Financial literacy. Paris: OECD

SECTION C: IMPLICATIONS OF HOUSEHOLD INDEBTEDNESS

The following items are related to determine what you perceive to be to the likely consequences of high indebtedness in Mauritius. Please read each statement carefully and indicate your level of disagreement or agreement by marking the appropriate response category.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Socio-cultural						
1.	Immoral behaviors (fraud and corruption)					
2.	Family breakdown					
3.	Stress					
4.	Alcoholism					
5.	Suicidal Tendency					
6.	No work life balance over work					
7.	Decreased Self esteem					
8.	Social exclusion					
Economic						
9.	Debt trap					
10.	Loss of productivity					
11.	Fall in current consumption					
12.	Struggling to meet basic needs					
13.	Financial instability					

SECTION D: REMEDIES TOWARDS INDEBTEDNESS

The following items are related to determine what you perceive to be the likely remedies to household indebtedness in Mauritius. Please read each statement carefully and indicate your disagreement or agreement by marking the appropriate response category

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Income and Asset Adequacy						
1.	Increasing people's disposable income/ minimum wage					
2.	Campaign on financial planning/Sensitization campaigns against overspending					
3.	Rescheduling of debts/ Individual voluntary agreement					
Financial Inclusion						
4.	Encouraging savings(through savings incentive scheme and sensitize the importance of precautionary savings)					
5.	Reduction in charges and fines					
6.	More social lenders (Credit unions etc)					
Improving financial literacy						
7.	Expand access to information/increased awareness: Media Social Media Specialised office					
8.	Provide financial capability training to professionals in organisations which provide services to household members					

9.	Increase financial literacy programmes					
10.	Provide budgeting advice and assistance to vulnerable groups : Face- to Face Telephone Online /Email/Social media					
11.	Creation of an Association of over indebtedness to provide the above services					
Responsible lending and borrowing						
12.	Ensuring that consumers get appropriate information when taking loans					
13.	Setting of a main credit scoring register (including hire purchase)					
14.	Introduced more stringent regulations with regards to various forms of borrowing					

SECTION E: INDICATORS OF OVER-INDEBTEDNESS

The following items are related to determine your attitude towards household indebtedness. Please read each statement carefully and give your response.

E1. Over the past 12 months, have you used any of the following ways to borrow money?

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Bank overdraft					
2.	Fixed term loan from the bank					
3.	Loan from a finance company					
4.	Loan from a friend or relative					
5.	Loan, or advance wage from your employer					
6.	Credit cards					

E1.a) What was/were the purpose(s) of the above loan/s? ....

E2. Do you currently owe any money on any of the financial commitments listed below?

	Types of Debts?	Amount (Rs) of debt	Monthly Servicing
1.	Rent /Mortgage		
2.	Hire purchase		
3.	Loans from banks		
4.	Loans from Individuals		
5.	Bank Overdrafts		
6.	Credit cards		
7.	advances from relatives/friends		
8.	Loans from Credit Union/Provident funds etc		
9.	Government support loans		
10.	Other sources of loans		

E3. Debt Structure

	Components of Debts	Amount (Rs) of debt	Monthly Servicing
1.	Household Appliances		
2.	Audio-visual Equipment		
3.	Furniture		
4.	Motor Vehicles		
5.	Housing		
6.	Education		
7.	Medical Care		
8.	Wedding loans		
9.	Unsecured loans		
10.	Gambling		
11.	Travel and Vacations		
12.	Other Personal Loans		

E4. Number of credit commitments

None 1 2 3 4 More than 4

E5. Arrears

Household's arrears on credit commitment or household bill

		None	1	2	More than 2
1.	Number of utility (household) bills household is behind on				
2.	Number of credit card repayments household is not managing				
3.	Number of borrowing repayments household is not managing				
4.	Number of debts the household has problems repaying				

E6. Debt to income Ratio

	Ratio	(%)
E6.1	Unsecured debt repayments to gross income	
E6.2	Total debt repayment to income	

E7. The following items are related to determine your own perceptions as to whether your family has 'debt problems' or suffers from 'financial stress' towards household indebtedness. Please read each statement carefully and give your response.

E7.1Which of following words best describes how your family is managing financially these days?

are in deep financial trouble	have some financial difficulties	neutral	don't manage very well	manage very well
5	4	3	2	1

E7.2 Over the past 12 months, how often would you say you found it hard to repay debts?

Very often	Quite often	Occasionally	Rarely	Never
5	4	3	2	1

E8. If you lost your main source of income, how long could you continue to cover living expenses, without borrowing any money or <moving house>?

More than 6 months	At least three months, but not six months	At least one month, but not three months	At least a week, but not one month	Less than a week
5	4	3	2	1

E9. Sometimes people find that their income does not quite cover their living costs. In the last 12 months, has this happened to you?

Yes No Don’t know Not applicable (I don't have any personal income)

E10. What did you do to make ends meet the last time this happened?

		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Existing resources						
1.	Draw money out of savings or transfer savings into current account					
2.	Cut back on spending, spend less, do without					
3.	Sell something that I own					
Creating resources						
4.	Work overtime, earn extra money					
Access credit by using existing contacts or resources						
5.	Borrow food or money from family or friends					
6.	Borrow from employer/salary advance					
7.	Pawn something that I own					
8.	Take a loan from my savings and loans clubs					
9.	Take money out of a flexible mortgage account					
10.	Apply for loan/withdrawal on pension fund					
Borrow from existing credit line						
11.	Use authorised, arranged overdraft or line of credit					
12.	Use credit card for a cash advance or to pay bills/buy food					
Access new line of credit						
13.	Take out a personal loan from a financial service provider (including bank, credit union or microfinance)					
14.	Take out a payday loan					
15.	Take out a loan from an informal provider/moneylender					
Fall behind/ go beyond arranged amount						
16.	Use unauthorised overdraft					
17.	Pay my bills late; miss payments					
Other responses						
18.Other						

SECTION F: ASSESSING AND MEASURING ATTITUDES AND PERSONALITY

This section aimed at assessing the psychological characteristics of the respondent. Please read each statement carefully and indicate your disagreement or agreement by marking the appropriate response category .

F1. Assessing attitudes by component		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Cognitive						
1.	Taking out a loan is a good thing as it allows you to make your life better					
2.	It is a good idea to have something now and pay for it later					
3.	Having debt is never a good thing					
4.	Credit is an essential part of today's lifestyle					
5.	It is important to live within one's means					
Emotional						
6.	I am not worried of having debt					
7.	I like having a credit card					
8.	I do not like borrowing money					
Behavioural						
9.	I prefer to save for making an expensive buy					
10.	It is better to go into debt than to let children go without Christmas presents					
11.	Even on a low income, I save a little regularly					
12.	Borrowed money should be repaid as soon as possible					

F2 Assessing locus of control		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Internal locus of control						
1.	When I make plans I am almost certain that I can make them work					
2.	What happens to me is my own doing					
3.	Doing things the right way depends upon ability; luck has nothing to do with it					
External locus of control						
4.	Many of the unhappy things in people's lives are partly due to bad luck					
5.	Getting a good job depends mainly on being in the right place at the right time					
6.	Many times I feel that I have little influence over the things that happen to me					

Source: Cosma and Pattarin (2012)

SECTION G: ABOUT THE RESPONDENT

G1. Your gender	□ Male □ Female
G2. What is your age group?	□ 18-24 years old □ 25-34 years old □ 35-44 years old □ 45- 54 years old □ 55-64 years old □ 65-74 years old □ 75-84 years old □ 85 years or older
G3. Marital status:	□ Single □ Married □ Widow □ Live together □ Divorce
G4. How many members are there in your family? ____________	
G5. How many dependent children do you have? ____________	
G6. How many members of your family have a job? ____________	
G7.1 In which sector do you work?	□Private Sector □Public Sector □Self-Employed
G7.2 Is your job	□Permanent □Contractual basis
G8. Household wealth value	□<500k □500k-1m □1m-3m □ 3m-5m □ >5m
G9. What is the approximate *monthly income level* in your *household*?(check one)	□Less than Rs 15,000 □Rs 15,000- Rs24,999 □Rs 25,000-Rs 34,999 □Rs 35,000 - Rs 44,999 □Rs 45,000-Rs 59,999 □Rs 60,000- Rs 79,999 □Rs 80,000-Rs 99,999 □Rs 100,000 or more
G10.1 Do you have any other sources of income?	□ No □If yes, please specify □ Part-time job □ Dividends □ Royalties □Interest □ Rental Income □ Others
G10.2 What is the approximate monthly transitory income in your household from the above mention sources? (check one)	□Less than Rs 2,000 □Rs 2,000- Rs 4,999 □Rs 5,000-Rs 10,000 □More than Rs 10,000
G11. What is the approximate monthly precautionary savings in your household? (check one)	□Less than Rs 2,000 □Rs 2,000- Rs 4,999 □Rs 5,000-Rs 10,000 □ More than Rs 10,000
G12. What is the approximate *monthly expense level* in your *household*?(check one)	□Less than Rs 15,000 □Rs 15,000- Rs24,999 □Rs 25,000-Rs 34,999 □Rs 35,000 - Rs 44,999 □Rs 45,000-Rs 59,999 □Rs 60,000- Rs 79,999 □Rs 80,000-Rs 99,999 □Rs 100,000 or more
G13. Monthly expense in your household consist mainly of	□Household Consumables □Transport □Utilities □Education Expenses □ Medical Expenses □Cigarettes/Alcohol □ Gambling □ Others ______________
G14. In which districts do you reside? (check one)	

□Flacq	□Grand Port	□Moka	□Pamplemousses	□Plaines Wilhems	□Port Louis
□Rivière du Rempart		□Rivière Noire		□Savanne	
G15. Please select which of the following ethnic groups you most closely associate with(check one):					
□Hindu	□Muslim	□Sino-Mauritian	□General Population	□ Others _____________	

Thank you.

Appendix B: Multiple Comparisons

Multiple Comparisons

Dependent Variable	(I) monthly income level	(J) monthly income level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Households financial management	Less than Rs 15,000	Rs 15,000 - 24,999	1.003*	.314	.036	.04	1.97
		Rs 25,000 - 34, 999	1.212*	.317	.005	.24	2.19
		Rs 35,000 - 44,999	1.635*	.376	.001	.48	2.79
		Rs 45,000 - 59,999	1.697*	.408	.001	.44	2.95
		Rs 60,000 - 79,999	2.447*	.518	.000	.85	4.04
		Rs 80,000 - 99,999	2.447*	.432	.000	1.12	3.78
		Rs 100,000 or more	1.614*	.518	.046	.02	3.21
	Rs 15,000 - 24,999	Less than Rs 15,000	-1.003*	.314	.036	-1.97	-.04
		Rs 25,000 - 34, 999	.209	.265	.993	-.61	1.02
		Rs 35,000 - 44,999	.632	.333	.553	-.39	1.66
		Rs 45,000 - 59,999	.694	.369	.565	-.44	1.83
		Rs 60,000 - 79,999	1.444	.488	.069	-.06	2.95
		Rs 80,000 - 99,999	1.444*	.396	.009	.23	2.66
		Rs 100,000 or more	.611	.488	.914	-.89	2.11

	Less than Rs 15,000	-1.212*	.317	.005	-2.19	-.24
	Rs 15,000 - 24,999	-.209	.265	.993	-1.02	.61
	Rs 35,000 - 44,999	.423	.336	.912	-.61	1.46
Rs 25,000 - 34, 999	Rs 45,000 - 59,999	.485	.372	.895	-.66	1.63
	Rs 60,000 - 79,999	1.235	.490	.196	-.27	2.75
	Rs 80,000 - 99,999	1.235*	.398	.047	.01	2.46
	Rs 100,000 or more	.402	.490	.992	-1.11	1.91
	Less than Rs 15,000	-1.635*	.376	.001	-2.79	-.48
	Rs 15,000 - 24,999	-.632	.333	.553	-1.66	.39
	Rs 25,000 - 34, 999	-.423	.336	.912	-1.46	.61
Rs 35,000 - 44,999	Rs 45,000 - 59,999	.063	.423	1.000	-1.24	1.36
	Rs 60,000 - 79,999	.813	.530	.788	-.82	2.44
	Rs 80,000 - 99,999	.813	.446	.607	-.56	2.19
	Rs 100,000 or more	-.021	.530	1.000	-1.65	1.61
	Less than Rs 15,000	-1.697*	.408	.001	-2.95	-.44
	Rs 15,000 - 24,999	-.694	.369	.565	-1.83	.44
	Rs 25,000 - 34, 999	-.485	.372	.895	-1.63	.66
Rs 45,000 - 59,999	Rs 35,000 - 44,999	-.063	.423	1.000	-1.36	1.24
	Rs 60,000 - 79,999	.750	.553	.875	-.95	2.45
	Rs 80,000 - 99,999	.750	.474	.760	-.71	2.21
	Rs 100,000 or more	-.083	.553	1.000	-1.79	1.62
	Less than Rs 15,000	-2.447*	.518	.000	-4.04	-.85
	Rs 15,000 - 24,999	-1.444	.488	.069	-2.95	.06
Rs 60,000 - 79,999	Rs 25,000 - 34, 999	-1.235	.490	.196	-2.75	.27
	Rs 35,000 - 44,999	-.813	.530	.788	-2.44	.82

		Rs 45,000 - 59,999	-.750	.553	.875	-2.45	.95
		Rs 80,000 - 99,999	.000	.572	1.000	-1.76	1.76
		Rs 100,000 or more	-.833	.639	.896	-2.80	1.14
	Rs 80,000 - 99,999	Less than Rs 15,000	-2.447*	.432	.000	-3.78	-1.12
		Rs 15,000 - 24,999	-1.444*	.396	.009	-2.66	-.23
		Rs 25,000 - 34, 999	-1.235*	.398	.047	-2.46	-.01
		Rs 35,000 - 44,999	-.813	.446	.607	-2.19	.56
		Rs 45,000 - 59,999	-.750	.474	.760	-2.21	.71
		Rs 60,000 - 79,999	.000	.572	1.000	-1.76	1.76
		Rs 100,000 or more	-.833	.572	.828	-2.59	.93
	Rs 100,000 or more	Less than Rs 15,000	-1.614*	.518	.046	-3.21	-.02
		Rs 15,000 - 24,999	-.611	.488	.914	-2.11	.89
		Rs 25,000 - 34, 999	-.402	.490	.992	-1.91	1.11
		Rs 35,000 - 44,999	.021	.530	1.000	-1.61	1.65
		Rs 45,000 - 59,999	.083	.553	1.000	-1.62	1.79
		Rs 60,000 - 79,999	.833	.639	.896	-1.14	2.80
		Rs 80,000 - 99,999	.833	.572	.828	-.93	2.59
hardness in repaying debts over past 12 years	Less than Rs 15,000	Rs 15,000 - 24,999	.585	.317	.590	-.39	1.56
		Rs 25,000 - 34, 999	.746	.322	.291	-.24	1.74
		Rs 35,000 - 44,999	1.709*	.373	.000	.56	2.86
		Rs 45,000 - 59,999	1.474*	.412	.011	.20	2.74
		Rs 60,000 - 79,999	2.140*	.523	.002	.53	3.75
		Rs 80,000 - 99,999	1.574*	.436	.010	.23	2.92
		Rs 100,000 or more	.807	.523	.783	-.80	2.42
	Rs 15,000 - 24,999	Less than Rs 15,000	-.585	.317	.590	-1.56	.39
		Rs 25,000 - 34, 999	.162	.269	.999	-.67	.99

	Rs 35,000 - 44,999	1.124*	.329	.018	.11	2.14
	Rs 45,000 - 59,999	.889	.372	.256	-.26	2.04
	Rs 60,000 - 79,999	1.556*	.493	.040	.04	3.07
	Rs 80,000 - 99,999	.989	.399	.215	-.24	2.22
	Rs 100,000 or more	.222	.493	1.000	-1.30	1.74
Rs 25,000 - 34, 999	Less than Rs 15,000	-.746	.322	.291	-1.74	.24
	Rs 15,000 - 24,999	-.162	.269	.999	-.99	.67
	Rs 35,000 - 44,999	.963	.333	.084	-.06	1.99
	Rs 45,000 - 59,999	.727	.377	.532	-.43	1.89
	Rs 60,000 - 79,999	1.394	.496	.101	-.13	2.92
	Rs 80,000 - 99,999	.827	.403	.452	-.41	2.07
	Rs 100,000 or more	.061	.496	1.000	-1.47	1.59
Rs 35,000 - 44,999	Less than Rs 15,000	-1.709*	.373	.000	-2.86	-.56
	Rs 15,000 - 24,999	-1.124*	.329	.018	-2.14	-.11
	Rs 25,000 - 34, 999	-.963	.333	.084	-1.99	.06
	Rs 45,000 - 59,999	-.235	.421	.999	-1.53	1.06
	Rs 60,000 - 79,999	.431	.530	.992	-1.20	2.07
	Rs 80,000 - 99,999	-.135	.445	1.000	-1.51	1.24
	Rs 100,000 or more	-.902	.530	.687	-2.54	.73
Rs 45,000 - 59,999	Less than Rs 15,000	-1.474*	.412	.011	-2.74	-.20
	Rs 15,000 - 24,999	-.889	.372	.256	-2.04	.26
	Rs 25,000 - 34, 999	-.727	.377	.532	-1.89	.43
	Rs 35,000 - 44,999	.235	.421	.999	-1.06	1.53
	Rs 60,000 - 79,999	.667	.559	.932	-1.05	2.39
	Rs 80,000 - 99,999	.100	.478	1.000	-1.37	1.57
	Rs 100,000 or more	-.667	.559	.932	-2.39	1.05
Rs 60,000 - 79,999	Less than Rs 15,000	-2.140*	.523	.002	-3.75	-.53
	Rs 15,000 - 24,999	-1.556*	.493	.040	-3.07	-.04

		Rs 25,000 - 34, 999	-1.394	.496	.101	-2.92	.13
		Rs 35,000 - 44,999	-.431	.530	.992	-2.07	1.20
		Rs 45,000 - 59,999	-.667	.559	.932	-2.39	1.05
		Rs 80,000 - 99,999	-.567	.577	.976	-2.34	1.21
		Rs 100,000 or more	-1.333	.645	.441	-3.32	.65
	Rs 80,000 - 99,999	Less than Rs 15,000	-1.574*	.436	.010	-2.92	-.23
		Rs 15,000 - 24,999	-.989	.399	.215	-2.22	.24
		Rs 25,000 - 34, 999	-.827	.403	.452	-2.07	.41
		Rs 35,000 - 44,999	.135	.445	1.000	-1.24	1.51
		Rs 45,000 - 59,999	-.100	.478	1.000	-1.57	1.37
		Rs 60,000 - 79,999	.567	.577	.976	-1.21	2.34
		Rs 100,000 or more	-.767	.577	.886	-2.54	1.01
	Rs 100,000 or more	Less than Rs 15,000	-.807	.523	.783	-2.42	.80
		Rs 15,000 - 24,999	-.222	.493	1.000	-1.74	1.30
		Rs 25,000 - 34, 999	-.061	.496	1.000	-1.59	1.47
		Rs 35,000 - 44,999	.902	.530	.687	-.73	2.54
		Rs 45,000 - 59,999	.667	.559	.932	-1.05	2.39
		Rs 60,000 - 79,999	1.333	.645	.441	-.65	3.32
		Rs 80,000 - 99,999	.767	.577	.886	-1.01	2.54
How long to cover living expenses if lost main source of income	Less than Rs 15,000	Rs 15,000 - 24,999	-.500	.316	.761	-1.47	.47
		Rs 25,000 - 34, 999	-1.076*	.320	.022	-2.06	-.09
		Rs 35,000 - 44,999	-.625	.375	.708	-1.78	.53
		Rs 45,000 - 59,999	-1.318*	.417	.040	-2.60	-.03
		Rs 60,000 - 79,999	-2.167*	.514	.001	-3.75	-.58
		Rs 80,000 - 99,999	-1.400*	.430	.031	-2.73	-.07
		Rs 100,000 or more	-1.667*	.514	.032	-3.25	-.08
	Rs 15,000 - 24,999	Less than Rs 15,000	.500	.316	.761	-.47	1.47

		Rs 25,000 - 34, 999	-.576	.265	.373	-1.39	.24
		Rs 35,000 - 44,999	-.125	.329	1.000	-1.14	.89
		Rs 45,000 - 59,999	-.818	.377	.377	-1.98	.34
		Rs 60,000 - 79,999	-1.667*	.482	.016	-3.15	-.18
		Rs 80,000 - 99,999	-.900	.391	.301	-2.11	.31
		Rs 100,000 or more	-1.167	.482	.240	-2.65	.32
	Rs 25,000 - 34, 999	Less than Rs 15,000	1.076*	.320	.022	.09	2.06
		Rs 15,000 - 24,999	.576	.265	.373	-.24	1.39
		Rs 35,000 - 44,999	.451	.332	.875	-.57	1.47
		Rs 45,000 - 59,999	-.242	.380	.998	-1.41	.93
		Rs 60,000 - 79,999	-1.091	.484	.327	-2.58	.40
		Rs 80,000 - 99,999	-.324	.394	.991	-1.54	.89
		Rs 100,000 or more	-.591	.484	.924	-2.08	.90
	Rs 35,000 - 44,999	Less than Rs 15,000	.625	.375	.708	-.53	1.78
		Rs 15,000 - 24,999	.125	.329	1.000	-.89	1.14
		Rs 25,000 - 34, 999	-.451	.332	.875	-1.47	.57
		Rs 45,000 - 59,999	-.693	.427	.736	-2.01	.62
		Rs 60,000 - 79,999	-1.542	.522	.071	-3.15	.07
		Rs 80,000 - 99,999	-.775	.440	.646	-2.13	.58
		Rs 100,000 or more	-1.042	.522	.489	-2.65	.57
	Rs 45,000 - 59,999	Less than Rs 15,000	1.318*	.417	.040	.03	2.60
		Rs 15,000 - 24,999	.818	.377	.377	-.34	1.98
		Rs 25,000 - 34, 999	.242	.380	.998	-.93	1.41
		Rs 35,000 - 44,999	.693	.427	.736	-.62	2.01
		Rs 60,000 - 79,999	-.848	.553	.788	-2.55	.86

		Rs 80,000 - 99,999	-.082	.476	1.000	-1.55	1.39
		Rs 100,000 or more	-.348	.553	.998	-2.05	1.36
	Rs 60,000 - 79,999	Less than Rs 15,000	2.167*	.514	.001	.58	3.75
		Rs 15,000 - 24,999	1.667*	.482	.016	.18	3.15
		Rs 25,000 - 34, 999	1.091	.484	.327	-.40	2.58
		Rs 35,000 - 44,999	1.542	.522	.071	-.07	3.15
		Rs 45,000 - 59,999	.848	.553	.788	-.86	2.55
		Rs 80,000 - 99,999	.767	.563	.873	-.97	2.50
		Rs 100,000 or more	.500	.630	.993	-1.44	2.44
	Rs 80,000 - 99,999	Less than Rs 15,000	1.400*	.430	.031	.07	2.73
		Rs 15,000 - 24,999	.900	.391	.301	-.31	2.11
		Rs 25,000 - 34, 999	.324	.394	.991	-.89	1.54
		Rs 35,000 - 44,999	.775	.440	.646	-.58	2.13
		Rs 45,000 - 59,999	.082	.476	1.000	-1.39	1.55
		Rs 60,000 - 79,999	-.767	.563	.873	-2.50	.97
		Rs 100,000 or more	-.267	.563	1.000	-2.00	1.47
	Rs 100,000 or more	Less than Rs 15,000	1.667*	.514	.032	.08	3.25
		Rs 15,000 - 24,999	1.167	.482	.240	-.32	2.65
		Rs 25,000 - 34, 999	.591	.484	.924	-.90	2.08
		Rs 35,000 - 44,999	1.042	.522	.489	-.57	2.65
		Rs 45,000 - 59,999	.348	.553	.998	-1.36	2.05
		Rs 60,000 - 79,999	-.500	.630	.993	-2.44	1.44
		Rs 80,000 - 99,999	.267	.563	1.000	-1.47	2.00

*. The mean difference is significant at the 0.05 level.