

Financial capability and emergency savings among South Africans living above and below the poverty line

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Abstract

Emergency savings provide a buffer against financial shocks, particularly among low-income households. Despite the importance of these funds in lessening financial hardship, many households have not set aside emergency funds. It has been suggested that financial capability may play a role in financial behaviour. Therefore, this study considers whether financial capability is associated with saving for emergencies and whether there are differences in factors that predict emergency savings behaviour amongst those living below and above the poverty line. Using data from a sample of South Africans, logistic regression is used to determine the predictors of emergency savings. The study finds that those with higher levels of financial capability, related to financial self-efficacy and having access to a bank account, are more likely to have emergency savings compared to those with lower levels of financial capability. However, no evidence is found to suggest a relationship between objectively measured financial knowledge and emergency savings. Therefore, the findings suggest that self-assessed financial ability, as measured by financial self-efficacy, might be more important than objectively assessed ability in the context of individuals making responsible financial choices. Differences in the predictors of emergency savings for those living above and below the poverty line related to socioeconomic and demographic differences, whereas the same financial capability predictors were significant predictors in both samples. The study provides unique insights into the predictors of emergency savings in a developing market context and identifies the characteristics of those who are likely to be financially resilient to unexpected economic shocks. The importance of the broader financial capability construct in predicting emergency savings, for both those living above and below the poverty line, suggests that programs aimed at encouraging emergency savings should focus on enhancing financial self-efficacy and financial inclusion.

Keywords: emergency savings; financial capability; financial knowledge; financial self-efficacy; financial inclusion; precautionary savings

1. Introduction

Household savings play an essential role in financial well-being both over the long term, where funding retirement is a key goal, and over the short term, where savings are required to cover unexpected expenses or loss of income (Brüggen, Hogreve, Holmlund, Kabadayi, & Löfgren, 2017; Gjertson, 2016). Given the important role that savings play in financial well-being, low savings rates are a worldwide concern with many countries recording low levels of household savings over the past decade. In particular, South Africa has one of the lowest household savings rates equating to only 0.26% of household disposable income in 2017 (OECD, 2018; South African Reserve Bank, 2018). Household savings as a percentage of disposable income, and household net savings as a percentage of gross domestic product, have been trending downward in South Africa over the last three decades (Kapingura & Alagidede, 2016; South African Reserve Bank, 2018). A variety of factors have potentially contributed to South Africa's low savings levels, including low levels of economic growth and increased access to credit as a result of financial liberalisation (Harjes & Ricci, 2005; Odhiambo, 2009).

Low levels of savings impact on the ability of households to provide for a comfortable retirement and concerns regarding inadequate retirement savings have been the focus of much research over the past few decades (Hanna, Kim, & Chen, 2016). However, another consequence of low savings levels is that households are vulnerable to economic shocks, as savings provide a buffer to help households cope with unforeseen emergencies and unexpected declines in income. This type of saving, referred to as emergency saving, has historically received less attention than retirement savings, but concerns regarding increasing levels of household financial vulnerability have highlighted the importance of understanding emergency savings behaviour (Chase, Gjertson, & Collins, 2011).

The idea that uncertainty regarding future income and consumption would lead consumers to hold emergency savings was recognised in the early development of savings theories (Fisher, 1930; Keynes, 1936). More recently, lack of access to emergency savings has been used as an indicator of financial fragility, as emergency savings are considered crucial for ensuring that negative economic events, such as illness, job loss, or unexpected expenses, do not lead to ongoing financial difficulties. In this regard individuals are seen as being financially fragile if they are unable to withstand negative economic events due to a lack of financial resources, while those who have access to financial resources to overcome negative economic events are

considered to be financially resilient (Hasler, Lusardi, & Oggero, 2018; Lusardi, Schneider, & Tufano, 2011). The key issue is that individuals need to access funds in emergency circumstances without turning to high-cost alternatives, such as payday loans, which may lead to further financial hardship (Brobeck, 2008b; Gjertson, 2016; Shah, Mullainathan, & Shafir, 2012). Although emergency savings are important for all households, low-income households are especially vulnerable to financial shocks. These households have less access to traditional credit and their savings are generally more constrained than higher income households, which implies that even small financial shocks could have long-lasting effects on their financial situation (Collins & Gjertson, 2013).

Different measures have been used to determine whether an individual is able to cope with unexpected expenditure, such as having access to a specific amount of money or having savings that would cover expenses over a particular time period. Depending on the measure used, approximately 30% to 50% of United States households are considered to have inadequate emergency savings, with this increasing to approximately 60% to 75% among low-income households (Hasler et al., 2018; Lusardi, 2011). Varying levels of emergency savings have been found in other countries, with one study reporting that approximately half of respondents in Germany, the United Kingdom, and Portugal had inadequate emergency savings, while in Canada and the Netherlands, just under 30% of respondents would not be able to cope with an emergency expense (Lusardi et al., 2011). Therefore, although emergency savings are meant to provide consumers with a buffer against unforeseen financial shocks, many individuals do not have emergency savings leaving them vulnerable to financial hardship (Christelis, Jappelli, Paccagnella, & Weber, 2009; Hasler et al., 2018).

This vulnerability is exacerbated in a country such as South Africa where there is limited recourse to social security, very high levels of poverty as well as income inequality, and high unemployment rates (World Bank, 2017). Therefore, South Africa provides a unique environment to study emergency savings behaviour among vulnerable households. In addition, given the large variation in income distribution across households in South Africa, comparisons can also be made between low-income households and households that have higher income levels to understand whether there are differences in the predictors of emergency savings behaviour.

In light of the role that emergency savings play in reducing the chances that households end up in further financial difficulty following an adverse financial event, it is important to understand what factors are associated with individuals having emergency savings. These

factors can then be used to identify those who are likely to be financially resilient and determine what distinguishes them from those who are considered to be financially fragile. While demographic and socioeconomic factors are expected to be associated with whether or not an individual has emergency savings, it has also been found that those with higher levels of financial knowledge are more likely to hold emergency savings compared to those with lower levels of financial knowledge (Babiarz & Robb, 2014). This finding supports the view that financially knowledgeable individuals are better able to cope with complex financial decisions, and are therefore more likely to engage in positive financial behaviour, compared to individuals with lower levels of financial knowledge (Hilgert, Hogarth, & Beverly, 2003; Lusardi & Mitchell, 2011).

While the initial focus of researchers in the field of financial decision-making was to consider how to enhance financial literacy among consumers through financial education interventions, there is debate regarding whether financial literacy programs have the desired effect (Alsemgeest, 2015; Fernandes, Lynch, & Netemeyer, 2014; Willis, 2009). Increasingly there is recognition that a broader financial literacy construct is required to understand consumer financial decision-making, and the focus has shifted to promoting financial capability among consumers (Atkinson, McKay, & Kempson, 2006). Therefore, the current study considers the broader construct of financial capability, as it relates to emergency savings, and continues to build on research that considers the role of financial capability in financial decision-making. The first objective of this study is to understand the predictors of emergency savings in South Africa, with a particular focus on financial capability. The second objective is to determine whether there are different predictors of emergency savings in South Africa for low-income households compared to households with higher income levels.

2. Review of Literature

The broader construct of financial capability has both individual and structural elements that combine the individual's ability to act with the opportunity to act (Sherraden, 2013). This construct is derived from the capabilities approach, which focuses not only on internal capabilities, linked to the characteristics of an individual, but also the external environment in which the individual has to operate, associated with the political, social, and economic environment (Nussbaum, 2011). Using the capabilities approach, financial capability focuses on aspects related to the individual, referred to in the current study as internal financial capability, and also considers the external context in which financial decision making takes

place, referred to in the current study as external financial capability. The second part of the conceptualisation of financial capability is often overlooked as many studies focus on internal capabilities but neglect to account for external conditions (Rothwell, Khan, & Cherney, 2016; Sherraden, 2013). The next section expands on the concept of internal financial capability, thereafter external financial capability is considered in more detail.

From an internal capability perspective, financial capability is considered to be the ability to combine financial knowledge and skill to perform desirable financial behaviours, which ultimately lead to the achievement of financial goals and financial well-being (Hoelzl & Kapteyn, 2011; Kempson, Collard, & Moore, 2005; Xiao, Chen, & Chen, 2014). In particular, internal financial capability is seen as the combination of knowledge, skills, confidence, and attitude that ultimately determines financial behaviour (Kempson et al., 2005).

Initially financial capability research focused on financial knowledge and skills, but the focus has now broadened to include confidence and attitude, as psychological attributes appear to be the key driver of individual action, or inaction, in financial decision-making (De Meza, Irlenbusch, & Reyniers, 2008). The importance of psychological attributes has been recognised in theories that seek to understand consumer behaviour, such as the theory of planned behaviour (Ajzen, 1991) and the transtheoretical model of behaviour change (Prochaska, 1984). Both of these theories consider one of the fundamental drivers of behaviour to be self-efficacy. In general, self-efficacy relates to individuals' beliefs about their ability to achieve specific goals or outcomes (Bandura, 1977). In the theory of planned behaviour, the original construct of perceived behavioural control has been found to comprise separable components of controllability and self-efficacy (Ajzen, 2002). From the perspective of the transtheoretical model of behaviour change, self-efficacy is a part of self-liberalisation, which is crucial during the action stage of this model (Prochaska & DiClemente, 2005). Both theories have been widely tested across a range of domains, from addiction to health choices, and results have shown support for the role of self-efficacy in behaviour change (Armitage & Conner, 2001; Prochaska & DiClemente, 2005). In light of these findings, researchers are now studying what role self-efficacy plays in determining financial behaviour (Farrell, Fry, & Risse, 2016; Lown, Kim, Gutter, & Hunt, 2015).

It is important to note that self-efficacy is not a general trait, rather it is domain specific (Bandura, 2006). Therefore, when considering financial behaviour, the focus is on financial

self-efficacy, which relates to individuals' perceptions regarding their financial management abilities and how self-assured they are about financial matters (Farrell et al., 2016). In effect, the greatest determinant of whether an individual succeeds is whether the individual believes they can succeed at a particular task. In essence, the level of confidence that an individual has in their ability to carry out a specific task determines the effort and persistence that they dedicate to carrying out that task. In many instances, this confidence or self-belief has a much more potent effect than an individual's innate ability to carry out a particular task (Bandura, 1977; Maddux, 2011).

In the context of financial decision-making, high levels of financial self-efficacy, reflected in an individual's confidence in their financial knowledge and ability, could in some cases be more important than their objectively measured knowledge and skill in determining financial behaviour. Researchers have found support for the role of confidence in determining financial behaviour, with many reaching the conclusion that an individual's subjective assessment of their level of financial knowledge may be more important than objectively measured financial knowledge with respect to resulting financial behaviours (Allgood & Walstad, 2016; Parker, Bruin, Yoong, & Willis, 2012; Robb & Woodyard, 2011; Xiao, Tang, Serido, & Shim, 2011).

Studies that find a relationship between subjective financial knowledge and behaviour may actually be highlighting the link between financial self-efficacy and financial behaviour.

Therefore, researchers have begun to test broader financial self-efficacy measures that go beyond a one-item measure of subjective financial knowledge. Findings from studies that make use of comprehensive financial self-efficacy scales confirm that financial self-efficacy is separately identifiable from financial knowledge and contributes significantly to predicting financial behaviour (Engelberg, 2007; Farrell et al., 2016; Rothwell et al., 2016). Studies that focus on understanding the role played by financial capability should therefore consider not only financial knowledge and skill but also the confidence of the decision maker, as measured by the individual's financial self-efficacy.

In addition to the focus on internal financial capability, the other consideration in studies of financial capability is the external environment. External financial capability focuses on the role that institutions play in promoting financial inclusion, such as access to appropriate products and services as well as the provision of the necessary incentives to promote asset accumulation (Sherraden, 2013). The concept of financial inclusion is narrower than that of economic inclusion, as it focuses on using or owning financial products rather than on

broader economic inclusion issues, such as overall wealth and income distribution (Friedline & West, 2016).

Studies of financial inclusion have found that financial product access and incentives are positively associated with asset accumulation in savings programs in the United States such as the Individual Development Account program and the Child Development Account program (Han & Sherraden, 2009; Nam, Kim, Clancy, Zager, & Sherraden, 2013). In the context of emergency savings, research has found that access to a bank account is positively related to emergency savings behaviour among millennials (Friedline & West, 2016) and low-income households (Hogarth & Anguelov, 2003). In addition, an exploratory study of an emergency saving scheme, which included access to an account and matched saving, provides preliminary support for the use of these financial inclusion mechanisms in promoting emergency savings among low-income individuals (Adams & West, 2015).

To account for the various elements of financial capability identified above, the conceptual model for this study considers the broader construct of financial capability as it relates to emergency savings. In the context of financial capability both internal and external financial capability are considered. Internal financial capability focuses on financial knowledge and skill, measured by objective financial knowledge tests, as well as confidence, measured by financial self-efficacy. The study makes use of a multi-item, domain-specific financial self-efficacy scale. In addition, the study explicitly accounts for external financial capability by including access to a bank account as a measure of financial inclusion.

In addition to the relationship between financial capability and emergency savings, the second aspect that this study considers is emergency savings in low-income households. The particular vulnerability of low-income earners to financial shocks has contributed to a growing body of research that considers what factors determine whether poor households save in general and specifically for emergencies (Adams & West, 2015; Curley, Ssewamala, & Sherraden, 2009; Gjertson, 2016; Rothwell et al., 2016). The definition of low-income households varies across studies but generally focuses on a measure of either relative poverty, based on the overall income distribution of households, or absolute poverty, based on specific income levels below which individuals are considered to be resource constrained (Ravallion, 2016). Research finds that those with low incomes are less likely to have emergency savings compared with higher income households (Brooks, Wiedrich, Sims, & Medina, 2014; Hasler et al., 2018; Lusardi et al., 2011). However, some poor households do manage to save, and research finds that low-income households that have emergency savings experience less

overall hardship than those without emergency savings (Gjertson, 2016; Hogarth & Anguelov, 2003).

In light of the vulnerability of poor households to financial shocks, it is important to understand what factors play a role in determining which low-income households save for emergencies. In this respect, resource constraints are one of the key factors limiting the saving of poor families, as spending on necessities often equals or may even exceed available income (Schreiner & Sherraden, 2007). In addition to resource constraints, it has been suggested that there are structural and psychological barriers to savings, which can be related to the financial capability construct discussed above (Collins & Gjertson, 2013). In the context of internal financial capability, low levels of emergency savings may be attributable to low-income households generally have lower levels of financial knowledge and financial capability compared to other households (Atkinson, McKay, Collard, & Kempson, 2007; Lusardi & Mitchell, 2007). It has been suggested that low-income households may not necessarily have less financial knowledge than other households, rather they may have different financial knowledge, specifically related to the financial situations that they encounter, such as budgeting and accessing benefits, which may not be captured in general assessments of financial knowledge levels (Buckland, 2010). However, concerns remain about low levels of knowledge particularly related to savings among low-income households (Anderson, Zhan, & Scott, 2004). From an external financial capability perspective, structural barriers may be in the form of a lack of access to savings products (Collins & Gjertson, 2013).

While previous studies of emergency savings have mainly focused on the developed world, this study uses data from a South African national survey, which provides insights from a developing world perspective, and allows the exploration of the phenomenon in low-income households, as a large number of households in South Africa are economically disadvantaged. The first objective of the study is to determine whether individuals who are considered to be financially capable, as measured by high levels of financial knowledge, high levels of financial self-efficacy, and access to a bank account, are more likely to have emergency savings, compared with those who are less financially capable. The second objective is to consider whether there are differences in the predictors of emergency savings for low-income households compared to households with higher income levels, specifically focusing on a comparison between South Africans living below and above the poverty line.

3. Method

3.1. Data

Data from the 2011 South African Social Attitudes Survey (SASAS), a national survey of South Africans over the age of 16, was used in this study (Human Sciences Research Council, 2011). The survey was conducted by the Human Sciences Research Council (HSRC), South Africa's publically funded statutory research agency. The SASAS is a cross-sectional survey conducted on an annual basis using a national sample of South Africans to measure social, economic, and political values. Each year the survey includes rotating modules on specific themes, and the 2011 survey contained a special addition of questions related to financial literacy. While there have been more recent surveys carried out by the HSRC, the 2011 survey provides the most recent data that contains the variables of interest for this study, in particular, the measure of financial self-efficacy.

Data collection occurred between November and December 2011, however, the data remains relevant in the present day context in South Africa for several reasons. First, the level of emergency savings among South Africans has remained fairly constant over the intervening years with approximately 30% of South Africans reporting that they have emergency savings to cover three months of expenses, based on data collected in 2011, 2012, 2013, and 2015 (Roberts, Struwig, & Gordon, 2016).

Second, the current macroeconomic environment has many similarities with the environment observed in 2011, particularly with respect to variables such as inflation, the prime interest rate (the benchmark rate at which private banks lend to the public), unemployment levels, and levels of household debt and savings, which have all been found to be associated with consumer vulnerability in South Africa (De Clercq, van Tonder, & van Aardt, 2015). Headline inflation averaged 5.3% in 2011 and is expected to average 5.2% in 2018. The prime overdraft rate in 2018 is 10% compared to 9% in 2011. The unemployment rate is higher at 27% in 2018 compared to 24% in 2011, while household debt to disposable income is lower at 70% in 2018 compared to 75% in 2011. Household savings as a percentage of GDP is at 1.6% in 2018, the same level as in 2011, whereas savings to disposable income is slightly higher at 0.3% compared to -1.3% in 2011 (South African Reserve Bank, 2011, 2018; Statistics South Africa, 2018).

Finally, the South African Consumer Financial Vulnerability Index (CFVI), which measures the vulnerability status of four components of consumer finances related to income,

expenditure, savings, and debt servicing, is also at similar levels in 2018 when compared to 2011. The overall CFVI was reported to be 52.6 in 2018 compared to 55.7 in the last quarter of 2011, indicating that in both instances consumers continue to view their finances to be mildly exposed to financial pressures on their cash flow related to income, expenditure, savings, and debt servicing, as the CFVI is between 49.9 and 60. The index score is between 0 and 100 and low index scores relate to high levels of consumer vulnerability (Unisa, 2018). In light of the similarities highlighted above, the 2011 data continues to have relevance in present day South Africa.

Respondents with data missing from any of the study variables were removed resulting in a final sample of 1537 respondents. Table 1 provides a comparison of the sample to the South African population using census data from 2011. Respondents in this study were generally older and more educated than the South African population, and employment levels were also higher than in the general population. In addition, Black Africans were underrepresented in the sample compared with the general population, while the other ethnicities were overrepresented. From the perspective of household income levels, the sample has more low-income respondents compared to the general population, and fewer middle-income and high-income respondents compared to the general population.

Insert Table 1 here

To facilitate the comparison between low-income households and households with higher income levels, respondents were categorised into two sub-samples, one consisted of those living below the poverty line (564 respondents) and the other consisted of those living above the poverty line (973 respondents). The poverty line in this study is defined using the upper bound poverty line (UBPL), which equates to an approximate monthly household income of South African Rand (ZAR) 2,000 (approximately US\$285 at the time of data collection in 2011). South Africa uses a cost-of-basic-needs approach to determining poverty levels that links welfare to the consumption of goods and services. Based on this approach those above the UBPL can purchase adequate food and non-food items, while those at or below the UBPL are considered to be resource constrained. The poverty line is adjusted each year to account for inflation (Statistics South Africa, 2012, 2014a). The UBPL has been used in previous research as an objective measure of poverty and is comparable to the poverty line measures adopted by other studies of poverty in post-apartheid South Africa (Posel & Rogan, 2016). A relative measure of poverty was also considered, making use of the international norm of using 50% or 60% of median income to determine a poverty threshold (Garroway &

Laiglesia, 2012). As the median monthly household income in South Africa in 2011 was ZAR3,704 (Statistics South Africa, 2012b) from a relative poverty perspective this equates to a poverty threshold related to household income of between ZAR1,852 and ZAR2,222 per month, providing support for the cut-off point of ZAR2,000 used in this study to define low-income households.

The dependent variable in the study related to the following question in the survey: “Have you set aside emergency or rainy day funds that would cover your expenses for 3 months, in case of sickness, job loss, economic downturn, or other emergencies?” The resultant variable was binary, with respondents who answered no coded as 0 and those who responded yes coded as 1.

As the study focused on determining the role played by financial capability in emergency savings decisions, a number of variables were included to measure different aspects of financial capability. With respect to internal financial capability, variables were included to measure financial knowledge and financial self-efficacy. Financial knowledge was measured using the “Knowledge and understanding” domain of questions developed by the International Network on Financial Education (OECD INFE, 2011). In line with the recommended approach, the variable created to measure financial knowledge is the number of correct answers to the eight questions, rescaled to take values from 0 to 100 (OECD, 2009, 2013).

The financial self-efficacy measure was the average score of the answers to five statements related to individuals’ perceptions of their ability to manage their finances. The variables were coded so that high scores indicated high levels of financial self-efficacy. The statements related to keeping track of money, making ends meet, shopping around for financial products, staying informed about financial issues, and a self-rated assessment of financial knowledge. The respondents were asked to rate themselves on a 5-point Likert-type scale, with low scores indicating the individual believed they were not good in a particular area, and high scores indicating the individual believed they were very good. In terms of the validity of the financial self-efficacy measure, the statements cover specific domains of financial capability identified by Atkinson et al. (2006), including managing money (which relates to the statements regarding keeping track of money and making ends meet), choosing products (which relates to the statement regarding shopping around for financial products), and staying informed (which relates to the statement regarding staying informed about financial issues). In addition, the statements relate specifically to the financial domain, which confirms

adherence to the criterion of domain specificity advocated by Bandura (2006). Domain specificity refers to the use of a measure of self-efficacy related directly to the situation being studied, in this case financial decision-making, rather than a generalised measure of self-efficacy. Therefore all statements included in the financial self-efficacy measure were related to the respondents' assessments of their financial abilities. The average score of the same five statements was used as the measure of financial self-efficacy in prior research related to financial capability (Rothwell et al., 2016).

Tests of internal consistency were conducted to determine the reliability of the measure in the current sample. For the five items the Cronbach alpha score was 0.870 and the inter-item correlations all exceeded the 0.30 threshold (with the average of the inter-item correlations being 0.57), providing confirmation that this measure has a high level of internal consistency (Robinson, Shaver, & Wrightsman, 1991).

In addition, to further assess the measure, principal component analysis (PCA) was carried out. The sampling adequacy was good with the Kaiser-Meyer-Olkin value equal to .845 (Kaiser, 1970) and correlations between items were sufficiently large to perform PCA (Bartlett's test of sphericity $\chi^2(10) = 3678.65, p < 0.001$). An initial analysis showed one component with an eigenvalue in excess of one, which was confirmed by the point of inflection at the second data point of the scree plot, indicating that one factor should be retained (Cattell, 1966). Therefore, the analysis confirmed only one factor was present, explaining 65.95% of the variance. Table 2 provides details of the factor loadings.

Insert Table 2 here

The variable included with respect to external financial capability related to whether the individual indicated that they currently had a bank account. Individuals were coded as 1 if they had a bank account and 0 if they did not.

Several socioeconomic and demographic variables have been found to be associated with emergency savings in prior studies (Babiarz & Robb, 2014; Bhargava & Lown, 2006; Bi & Montalto, 2004; Chase et al., 2011; Huston & Chang, 1997). Therefore, education level, household income, employment status, marital status, number of child dependents, age, sex, and race were included as socioeconomic and demographic control variables. Employment status was divided into two categories to distinguish those who were employed (including full-time, part-time and self-employed) from those who were not employed (including unemployed, student, retired and homemaker). Education level was converted to the number

of years of education to avoid issues related to collinearity with the household income categories. Finally, as prior studies have found a positive relationship between risk tolerance and emergency savings, financial risk tolerance was included as an additional control variable in the study (Babiarz & Robb, 2014; Bhargava & Lown, 2006; Huston & Chang, 1997). Financial risk tolerance was based on a 5-point scale where respondents noted their level of agreement or disagreement with the following statement “I am prepared to risk some of my own money when saving or making an investment”.

3.2. Data analysis

As the outcome variable in this study was binary, logistic regression was used as the multivariate analysis technique to determine the significance of factors in predicting whether an individual reported having emergency savings to cover three months’ expenses. Due to the binary nature of the outcome variable, the transformation required to create the final logistic regression model used the logit function as the link function. An unweighted regression analysis was carried out because the weights used in this survey were related to independent variables included in the model, which makes it preferable to use unweighted regression estimates. In these circumstances, the unweighted regression produces unbiased and consistent estimates with smaller standard errors than a weighted regression (Solon, Haider, & Wooldridge, 2015; Winship & Radbill, 1994).

The Wald test statistic was used to assess the statistical significance of predictors in the multivariate models, and odds ratios were used to interpret the relationship between predictor variables and the outcome variable. The Pearson chi-square test and the independent t-test were used for bivariate comparisons of the characteristics of those living below the poverty line compared to those living above the poverty line. The statistical software package used for data analysis was IBM SPSS Statistics version 24. Two models were specified to analyse the relationships, one that included individuals whose household income levels place them below the poverty line and a second model for those with household incomes above the poverty line.

4. Results and Discussion

Table 3 provides an overview of the characteristics of the respondents living below and above the poverty line. In addition, Table 3 provides the results of the bivariate comparison tests of the differences between the characteristics of the two sub-samples. From the perspective of emergency savings, there were significantly higher levels of emergency savings in the above

the poverty line sample, where 44.4% of respondents reported having access to emergency savings, compared to only 13.3% among respondents living below the poverty line. These levels of emergency savings are broadly in line with the findings of studies in the United States using data from the National Financial Capability Study collected in 2009 and 2012. In 2009 just under half of all respondents had set aside emergency savings to cover three months of expenses, while only 26% of respondents in low-income households had emergency savings. In 2012, 40% of respondents had set aside emergency savings, decreasing to only 19% among low-income households (FINRA, 2013; Lusardi, 2011).

Insert Table 3 here

In terms of the measures of financial capability included in this study (financial self-efficacy, financial knowledge, and access to a bank account), those in the below the poverty line sample reported statistically significantly lower average values across all measures compared to those living above the poverty line. With respect to the other characteristics included in Table 3, those in the below the poverty line sample had significantly lower average risk tolerance scores compared to those living above the poverty line. They also, on average, had fewer years of education, more child dependents, and were more likely to be unemployed, unmarried, and female, compared to those living above the poverty line. As a result of past racial inequalities in South Africa, poverty is still highly concentrated among the Black African population group with research conducted in 2011 finding that 90% of those living below the poverty line in South Africa are Black Africans (Statistics South Africa, 2014a). This inequality is reflected in the sample characteristics as more than 85% of respondents living below the poverty line are Black Africans.

The results of the binary logistic regression models for those living below the poverty line and those living above the poverty line are reported in Table 4. The likelihood ratio test statistic (Model χ^2) indicates that both models are statistically significantly different from a model with only the constant term. In terms of predictive ability, for the model for those living below the poverty line, the area under the receiver operating characteristic (ROC) curve was .759 (SE = .027), and for the model for those living above the poverty line it was .757 (SE = 0.015), which indicates that both models provide acceptable discrimination between groups (Hosmer & Lemeshow, 2000). Variance inflation factors (VIF) and tolerance values were inspected to determine if there were multicollinearity issues. No tolerance values were below 0.2, and VIF values ranged from 1.07 to 1.78, which provided confirmation that multicollinearity was not a concern (Menard, 2010).

Insert Table 4 here

The Wald test statistic was used to assess the statistical significance of each predictor. The results are interpreted by considering the predictive ability of each variable while holding all other variables constant. For categorical variables, the results are interpreted with respect to the reference category.

In terms of the measures related to financial capability, individuals from households above and below the poverty line were more likely to have emergency savings if they had higher levels of financial self-efficacy and reported having access to a bank account, compared to those with lower levels of financial self-efficacy and no access to a bank account. Objectively measured financial knowledge was not a statistically significant predictor of emergency savings in either of the models. The odds ratios in Table 4 provide insights into the practical significance of the findings with respect to financial capability. Holding all other variables constant, for every unit increase in an individual's level of financial self-efficacy (measured on a scale of 1 to 5) the odds of having emergency savings increases by 41% for those living above the poverty line, and 51% for those living below the poverty line. Having access to a bank account increased the odds of having emergency savings by 108% for those living above the poverty line, and 127% for those living below the poverty line, compared to individuals who did not have access to a bank account.

Therefore, the current study supports other research that has found financial self-efficacy to be an important predictor of financial behaviour (Farrell et al., 2016; Rothwell et al., 2016). In addition, the findings confirm the importance of external financial capability, in this instance access to a bank account, in predicting emergency savings. This finding supports the view that banks play a crucial role in enabling the emergency savings behaviour particularly among low-income households (Brobeck, 2008a; Hogarth & Anguelov, 2003).

In addition, the finding that objectively measured financial knowledge did not predict emergency savings behaviour could indicate that subjective confidence in financial ability might be more important than objectively assessed ability in the context of individuals making responsible financial choices. The importance of confidence, rather than objective knowledge, as a predictor of financial behaviour has also been highlighted in several other studies that consider responsible financial choices, such as having an emergency fund, obtaining a credit report, not having an overdraft, paying credit cards in full, having a

retirement account, and holding appropriate insurance cover (Allgood & Walstad, 2016; Parker et al., 2012; Robb & Woodyard, 2011; Xiao et al., 2011).

Key differences were observed between socioeconomic and demographic factors that predicted emergency savings among those living above and below the poverty line. In particular, for households above the poverty line, individuals who were more educated, older, and with higher incomes were more likely to have emergency savings compared to those who were less educated, younger, and earned lower incomes. Whereas for individuals living below the poverty line family structure played an important role, as those who had fewer child dependents and those who were married were more likely to have emergency savings compared to those who had more child dependents and those who were unmarried. In addition, a further difference between the two sub-samples was that financial risk tolerance was only a significant predictor of emergency savings for those living above the poverty line. While these findings were in line with previous studies (Babiarz & Robb, 2014; Bhargava & Lown, 2006; Chase et al., 2011; Huston & Chang, 1997), they allowed for a differentiation to be made between the important predictors of emergency savings for those living above and below the poverty line.

This study has limitations that need to be taken into consideration. First, the study makes use of self-reported measures. The self-report nature of survey data can result in respondents not answering honestly or accurately for a number of reasons, including social desirability bias and issues related to question design or wording (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). The study was designed to limit these biases where possible. The respondents were told that there were no right or wrong answers and that their responses were anonymous. In addition, the survey used measures that had been previously developed and tested in an effort to reduce potential bias due to specific item design. A second limitation relates to the fact that the data are cross-sectional. Therefore, the study does not establish causation and endogeneity might be an issue, as the direction of the relationship may not flow from the predictor to the outcome but rather in the reverse. Finally, the sample was not representative of the South African population on certain characteristics. In particular, when compared to the South African population, the respondents in this sample were generally older, more educated, and more likely to be employed, which are all factors that potentially play a role in financial decision-making. However, the consistent findings across both sub-samples with regard to the financial capability predictors provides confirmation that these findings apply to groups that are less educated and less likely to be employed, as well as those who are more educated

and more likely to be employed. While both age and education were significant predictors of emergency savings in this study, as the sample was older and more educated than the general population, the results should be interpreted with caution as they could be overestimating the relationship between these factors and emergency savings. Therefore, the results of the study provide initial insights into the predictors of emergency savings, but further testing in other samples would be required before the results can be generalised to the broader South African population.

5. Conclusion and implications

In light of the important role that emergency savings play in potentially reducing the financial fragility of individuals, the findings of this study provide insights into the characteristics of those who are expected to be financially resilient when exposed to economic shocks. In this regard, in addressing the first objective of the study, the findings highlight the importance of financial capability, and in particular financial self-efficacy and access to a bank account, as important predictors of preparedness for financial emergencies. Furthermore, the significance of financial self-efficacy, rather than financial knowledge, in predicting emergency savings provides an indication that subjective confidence in financial ability might be more important than objectively assessed ability in the context of individuals making responsible financial choices, such as putting aside emergency funds.

With respect to the second objective of the study, differences in the predictors of emergency savings for those living above and below the poverty line related to socioeconomic and demographic differences, with family structure playing a more important role for those living below the poverty line than those living above the poverty line. However, the same financial capability predictors were significant in both samples providing further support for the importance of financial capability in the context of emergency savings across the socioeconomic spectrum.

The study's key contribution is that it provides unique insights into the predictors of emergency savings in a developing market context, confirming that financial capability predictors, which have generally been studied in a developed world context, are relevant in South Africa too. An additional contribution of the study is the use of several different measures of financial capability, with the findings highlighting the importance of considering a broader financial capability construct, which includes financial self-efficacy as well as external financial capability, to provide a comprehensive picture of the individual as a

financial decision maker. Furthermore, the importance of these financial capability factors in predicting emergency savings behaviour for those living below the poverty line contributes to the literature related to savings behaviour among low-income households, providing insights for other developing countries where low-income households make up a greater percentage of the population compared to developed countries.

The findings of this study have several implications for both policymakers and financial practitioners. First, financial education programs that focus only on enhancing financial knowledge levels may not be sufficient, instead the focus needs to shift to considering how to enhance financial self-efficacy. Areas that can be explored include financial coaching and training that focus on building confidence. In this regard pilot programs, such as the MyPath savings initiative in the United States, have provided initial indications that financial self-efficacy can be enhanced (Loke, Choi, & Libby, 2015). Further research that focuses on interventions to enhance financial self-efficacy would be helpful in providing insights into what is feasible in the context of improving financial capability in this manner.

Second, in light of the importance of access to a bank account in an emergency savings context, there is scope for exploring the replication of savings programs, such as the Individual Development Account and the Child Development Account initiatives, with a view to increasing the number of households that have emergency savings. An initial pilot appears to indicate that there is merit in establishing incentivised emergency savings accounts (Adams & West, 2015). Once again, further research that focuses on the mechanisms through which external financial capability can be enhanced, in an emergency savings context, could help policymakers understand the particular program features that are best suited in this context.

Finally, as this study has shown that there are similar predictors of emergency savings in South Africa as have been found in developed countries, the key implication for South African policymakers and financial practitioners is that programs that have been used to incentivise savings in these countries may be worth replicating in South Africa. In particular, programs that combine elements of external financial capability, through access and incentivised savings accounts, as well as internal financial capability, through financial self-efficacy enhancing activities, could be effective in promoting emergency savings for those living both below and above the poverty line.

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Table 1

Demographic and socioeconomic variables of the sample compared to the South African population in 2011

Characteristic	Sample (n = 1537)	South African population ^a
Male	45.8	47.8
Married ^b	41.6	42.8
Employed ^c	49.7	40.0
Race		
Black African	63.8	77.5
White	11.4	10.6
Mixed Race	13.5	9.1
Indian/Asian	11.3	2.9
Education Level		
No secondary schooling	20.3	24.0
Some secondary schooling	33.5	38.1
Completed secondary schooling	30.6	27.3
Tertiary qualification	15.6	10.6
Age		
16 – 19 years	3.6	11.3
20 – 29 years	21.9	29.2
30 – 39 years	24.9	21.0
40 – 49 years	21.8	15.6

50 – 59 years	13.6	11.3
60 years and older	14.3	11.6
Household income levels ^d		
ZAR1,000 and below	15.2	12.5
ZAR1,001 – ZAR2,000	21.5	16.8
ZAR2,001 – ZAR5,000	24.7	29.3
ZAR5,001 – ZAR15,000	23.5	22.9
ZAR15,001 and above	15.1	18.4

^aData for South African population is from the 2011 census (Statistics South Africa, 2012a, 2014b) adjusted to include only those aged 16 and above to align with the target population for the SASAS.

^bMarried includes customary marriages and those living together like married partners.

^cEmployed includes full-time, part-time, and self-employed as a percentage of the total population aged 16 and above.

^dIncome brackets for the Census do not correspond to those used in the SASAS therefore comparisons were based on data from the Income and Expenditure Survey 2010/2011 that overcomes limitations associated with income data from the Census (Statistics South Africa, 2012b, 2015).

Table 2

Component Matrix Financial Self-Efficacy Scale

Scale Items	Component 1	Communality
Staying informed about financial issues	.86	.73
Keeping track of money	.85	.72
Making ends meet	.81	.66
Shopping around to get the best financial product	.78	.61
Self-rated level of financial knowledge	.76	.58
Percentage of Variance	65.95	
Eigenvalue	3.30	
Cronbach's Alpha	.87	

Table 3:

Characteristics of respondents living below the poverty line compared to characteristics of respondents living above the poverty line

Characteristic	Below poverty line (n = 564)	Above poverty line (n = 973)	Comparison ^a
<i>Scale variables (range)</i>	<i>Mean (SD)</i>		<i>t</i>
Financial self-efficacy (1 – 5)	2.71 (1.07)	3.48 (0.99)	-13.87***
Objective financial knowledge (0 – 100)	56.67 (25.54)	69.09 (20.10)	-9.91***
Financial risk tolerance (1 - 5)	2.73 (1.20)	3.16 (1.22)	-6.64***
Education years (0 – 15)	8.55 (3.53)	11.56 (2.59)	-17.71***
Number of child dependents (0 – 10)	1.37 (1.50)	1.06 (1.31)	4.07***
Age (16 – 93)	40.68 (16.07)	41.78 (14.47)	-1.34
<i>Categorical variables</i>	<i>Percent</i>		<i>χ²</i>
Emergency savings to cover 3 months of expenses	13.3	44.4	156.23***
Has a bank account	53.2	86.6	209.54***
Employed	25.2	63.9	214.44***
Married	26.6	50.4	82.97***
Male	39.4	49.5	14.89***
Household monthly income levels ^b			-
Less than ZAR1,000	41.3	-	
ZAR1,001 - ZAR2,000 ^c	58.7	-	
ZAR2,001 – ZAR5,000	-	39.1	
ZAR5,001 – ZAR15,000	-	37.1	
Greater than ZAR15,001 ^d	-	23.8	
Race			230.08***
Black African ^e	85.8	51.1	
Mixed race	11.7	14.6	
Indian/Asian	1.8	16.8	
White	0.7	17.6	

^a For comparisons between the sample characteristics of those living below and above the poverty line the independent samples t-test is used for the scale variables and the Chi-square test of independence is used for the categorical variables.

^b 1.00 USD = approximately ZAR7.00 in 2011 at the time of data collection.

^c Reference category for below the poverty line regression analysis.

^d Reference category for above the poverty line regression analysis.

^e Reference category for both below and above the poverty line regression analyses.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4

Logistic regression analysis of the determinants of emergency savings for those below and above the poverty line

Variable	Below poverty line		Above poverty line	
	Beta coefficient	OR	Beta coefficient	OR
Financial self-efficacy	0.413** (0.14)	1.511	0.346*** (0.09)	1.413
Objective financial knowledge	-0.008 (0.01)	0.992	-0.004 (0.00)	0.996
Has bank account	0.819* (0.32)	2.269	0.732** (0.28)	2.080
Financial risk tolerance	-0.129 (0.12)	0.879	0.179** (0.06)	1.196
Education years	0.010 (0.05)	1.010	0.140*** (0.04)	1.150
Number of child dependents	-0.348** (0.12)	0.706	-0.006 (0.06)	0.994
Age	-0.015 (0.01)	0.985	0.012* (0.01)	1.012
Employed	0.588 (0.30)	1.800	0.130 (0.18)	1.138
Married	1.114*** (0.29)	3.048	-0.165 (0.16)	0.848
Male	-0.319 (0.29)	0.727	-0.075 (0.15)	0.927
Household monthly income levels ^a				
Less than ZAR1,000	0.091 (0.28)	1.096		
ZAR2,001 – ZAR5,000			-1.071*** (0.24)	0.343
ZAR5,001 – ZAR15,000			-0.665** (0.20)	0.514
Race ^b				
Mixed race			-0.373 (0.23)	0.688
Indian/Asian			-0.009 (0.22)	0.991
White			0.134 (0.24)	1.143
All others ^c	-0.002 (0.38)	0.998		
Constant	-2.377 (0.86)	0.093	-3.784 (0.73)	0.023

Model χ^2	59.884 p < .001	210.175 p < .001
Area under ROC curve	.759 (0.03)	.757 (0.02)
n	564	973

Note. OR = odds ratio. Standard errors are in parentheses.

^a Reference categories: Below poverty line model: ZAR1,001 – ZAR2,000; Above poverty line model: Greater than ZAR15,000.

^b Reference category is Black African

^cIn the below the poverty line model, due to low frequency counts, Mixed race, Indian/Asian, and White respondents were combined into one category and compared to the reference category of Black Africa.

* p < .05. **p < .01. ***p < .001.