




Personal conversion factors influencing debt uptake amongst young households in South Africa



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Orientation: Young South African households (in which the head of the household is between 18 and 32 years old) are starting their financial life journey.

Research purpose: To determine which personal conversion factors influence young adults' choices to access the various types of debt as they age.

Motivation for the study: By focusing on the role of the different personal conversion factors on the debt uptake of young households, this article furthers the discussion on the concept of financial capability, referring to the ability of young households to convert debt uptake opportunities into debt uptake outcomes.

Research approach/design and method: The data were collected for the period 1999–2013 from the annual South African Advertising Research Foundation's All Media and Products Survey (AMPS). By means of Cox proportional hazards regression models, the article determines the influence of personal conversion factors on choices to access different types of debt by young households in South Africa.

Main findings: Personal conversion factors (e.g. employment status, level of education, life stage, family size, household income and the number of financial assets) significantly impact credit card uptake of these young households. Similar relationships were not found for the other five debt products that was included in the evaluation.

Practical implications/managerial implications: Young households are in need of debt intervention, but they need to be fully included in developing such interventions to ensure that buy-in. The young households should also be considered high priority by all stakeholders to ensure they refrain from becoming over-indebted.

Contribution/value-add: Through the application of the capability approach, this article presents an alternative approach to assess the determinants of debt product uptake over time.

Keywords: Cox proportional hazards regression model; household debt; young households; capability approach; personal conversion factors.

Introduction

Orientation

Household debt is an area of research that holds great interest for researchers across the world. It is an important gauge of the financial stability of the household sector as a rising household debt ratio may have significant implications for macroeconomic activity. Any evidence to the threat of an unsustainable debt position can assist regulators and other stakeholders from both a macro- and microeconomic perspective (Du Caju et al. 2014:61).

The focus on household debt and the potential threat to financial stability is also relevant to South Africa. The debt composition of South African households has changed in recent years. The level of household liabilities in South Africa has increased substantially since 1999. The ratio of mortgages to other liabilities has shifted since then as the amount of other liabilities taken up by households has steadily grown while growth in mortgage advances started to taper. The growth in total household liabilities can therefore largely be attributed to the surge in other liabilities (NCR 2012; SARB 2017).

The National Credit Regulator (NCR) indicated that there are complex and multidimensional reasons for the increase in unsecured loans, that is, because of the constrained mortgage lending market, following on from the financial crisis, South African households are more inclined to use unsecured loans. These loans can be obtained within a short period of time and with more ease

than secured loans and can be used for a variety of purposes (NCR 2012).

The question can be asked as to why there has been such a strong increase in debt uptake, especially with respect to unsecured debt. A possible explanation for this could be that there are several personal factors impacting debt uptake outcomes amongst households. Such personal factors act as personal conversion factors in the sense that they give rise to the conversion of debt uptake opportunities into debt uptake outcomes. By focusing on the role of different personal conversion factors on the debt uptake of specifically young households, this article furthers the discussion on the concept of financial capability, which, for purposes of this article, refers to the ability of young households to convert debt uptake opportunities into debt uptake outcomes (or financial functionings). Sherraden (2013:3) defines the concept of financial capability as follows: '[f]inancial capability is both an individual and a structural idea. It combines a person's *ability to act* with their *opportunity to act*'.

According to Sherraden (2013:4), to be financially capable a person must, firstly, be financially capable and, secondly, must have access to financial products and services that allow him or her to act in his or her best financial interest. The combination of the ability to act and the opportunity to act will result in achieved financial functionings (Sherraden 2013:4) that will allow households to improve their financial well-being and future financial security. This supports the capability approach as an evaluative framework, which highlights that human heterogeneity and conversion factors (i.e. personal, social and geographical characteristics) will influence the ways in which households translate their assets and resources into valued and achieved functionings, such as home-ownership, obtaining education or financial security (Storchi & Johnson 2016:15). More details regarding the capability approach, and more specifically focusing on financial capability, are provided in the literature review and conceptualisation.

Research purpose and hypothesis

Through the application of the capability approach, this article presents an alternative approach to assess the determinants of debt product uptake. Despite the overwhelming global interest on household debt, studies in South Africa have focused on the increase in unsecured debt (NCR 2012) or household over-indebtedness (Ntsalaze & Ikhide 2016), but not on the young households and their demand for debt. Given that young households are starting their financial life journey and may not necessarily have all the debt uptake opportunities that they desire at the right price because of a whole host of personal conversion factors, this article will provide a new focus on young households from South Africa and the personal conversion factors impacting their debt product uptake. By applying the capability approach, the freedom or set of capabilities available to young households to choose to participate in the credit market will be reviewed based on their personal conversion factors. By means of Cox regression

analyses, this article aims to determine which personal conversion factors will influence their choices to access different types of debt as they age.

Based on the debt product uptake relationships and factors identified from the literature, the following research hypothesis was formulated for purposes of this article:

H₁: The uptake of debt products by young households is statistically significantly influenced by personal conversion factors.

The remainder of this article is structured as follows: firstly, presentation of the evaluative framework constructed on the capability approach and an overview of the literature regarding the personal conversion factors for household debt product uptake; secondly, discussion of the most pertinent aspects of the research design; thirdly, a presentation of the results; fourthly, the discussion of the results; and finally, the conclusion.

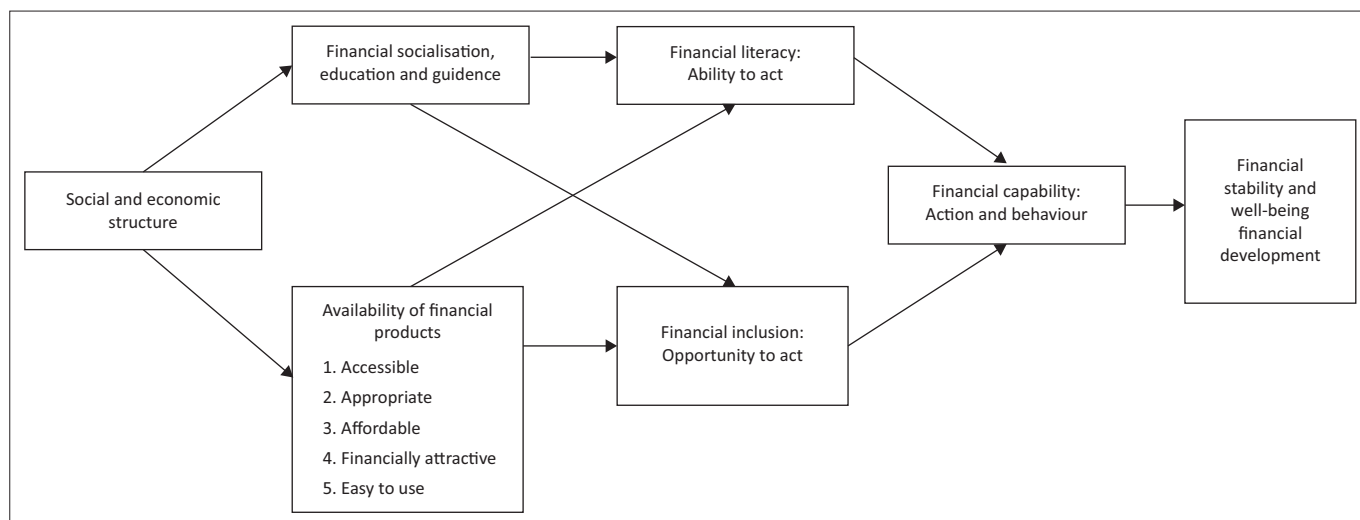
Literature review and conceptualisation

In this section, the evaluative framework underpinning debt uptake and personal conversion factors impacting debt uptake are discussed. Based on the meaning of capability derived from the seminal work of Amartya Sen and Martha Nussbaum, Sherraden (2013:21) schematically depicts financial capability as the combined influence of financial knowledge and skills with financial inclusion – people need both the *ability to act* and the *opportunity to act* (see Figure 1). For a detailed description on the conceptual framework, see Sherraden (2013).

As shown in Figure 1, financial capability is the result of both financial literacy and access to financial services and products. On the first domain, the South African youth have been found to have low levels of financial literacy. According to the Financial Services Board's Financial Literacy Survey of 2012, it was revealed that the younger age groups had financial literacy scores below the average score of 54 for South Africa as a whole (Struwig, Roberts & Gordon 2013). The youth are therefore at a greater risk of making uninformed decisions regarding debt acquisition and financial products usage.

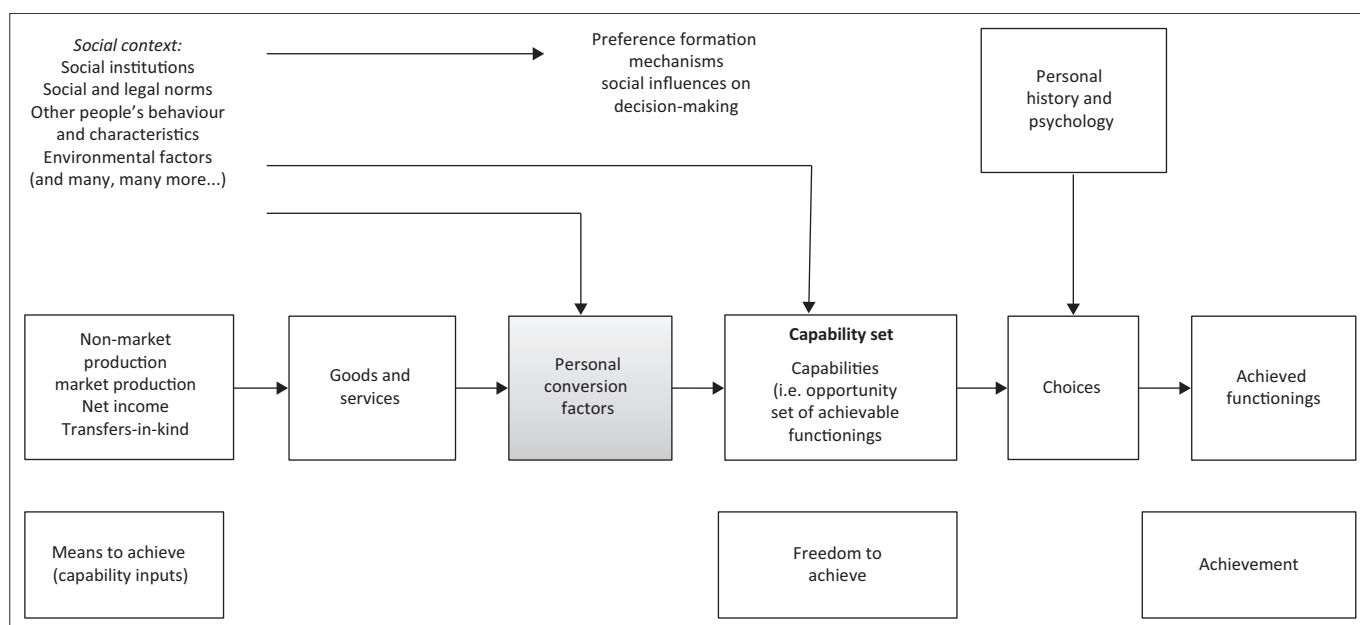
In the same study, the younger age groups achieved relatively higher domain scores regarding financial knowledge and understanding, but their ability to act is hindered by their low scores in all other domains, namely, financial control, financial planning and choosing financial products (Struwig et al. 2013:97). However, the higher level of financial knowledge will not result in financial capability on its own, but should be supported by access to resources and institutions that will allow them to absorb and act on their attained knowledge and skills (Johnson & Sherraden 2007:125).

Furthering the capability approach and focusing more on the *ability to act* or financial inclusion, it is important to reflect on the level to which young households have access to the debt that they desire, that is, whether they are able to obtain



Source: Sherraden, M.S., 2013, 'Building blocks of financial capability', in J. Birkenmaier, M.S. Sherraden & J. Curley (eds.), *Financial capability and asset development: Research, education, policy, and practice*, p. 21, Oxford University Press, New York.

FIGURE 1: Conceptual framework of financial capability.



Source: Adapted from Robeyns, I., 2005, 'The capability approach: A theoretical survey', *Journal of Human Development* 6(1), 98. <https://doi.org/10.1080/146498805200034266>

FIGURE 2: A person's capability set and his or her social and personal context.

student loans to fund their studies, mortgages to buy homes, vehicle finance to purchase vehicles, credit card facilities for transactional purposes and so forth. Storchi and Johnson (2016:6) provide additional insights into the capability approach, although it will be possible in a perfect world to realise the full capability set by ensuring that people have full access to all the debt at the price they require, life is not perfect. People rather must make choices as to what debt they require and having tried to acquire such debt, they must choose amongst the debt products available to them. Thus, this less-than-optimal choice process results in the actual debt product uptake of the young household being influenced by the financial functionings that are accessible.

The said less-than-optimal choice process is brought about by many personal conversion factors which influence the choice

and debt uptake of a person, resulting in a situation where the financial functionings with respect to debt uptake are very different from the capability set. According to Robeyns (2005:98) (see Figure 2), the said personal conversion factors impact the choices linking capabilities and functionings.

The capability approach considers the influence of personal conversion factors on achieved financial functionings in two ways: firstly, by keeping in mind that there is a plurality of financial functionings and capabilities amongst people constituting the evaluative space and, secondly, by focusing on personal conversion factors of commodities into financial functionings (Robeyns 2005). In brief, in terms of the capability approach applied to debt uptake behaviour, household members have different abilities to access debt based on their personal attributes and there are differential abilities amongst

them to use their existing debt uptake opportunities to access more debt. Ultimately, the said personal conversion factors will either enhance or depress a person's ability to fully live out his or her freedom to choose debt products. Should a person have full freedom of choice with respect to debt products because of such a person having the optimal combination of personal conversion factors, the person will have a narrower gap between debt uptake capabilities and debt uptake achieved financial functionings compared with a person with a less-than-optimal combination of personal conversion factors.

For the purposes of this article, it is postulated that debt uptake choices and opportunities can be impacted by personal conversion factors (including, but not limited to, working status, entrepreneurship status, occupation, educational attainment, life stage, family size, income, financial assets) (Malan 2016:76). The reason for this in terms of Amartya Sen's capability approach is that people have diverse personal conversion factors giving rise to diverse achieved financial functionings with respect to debt.

Thus, the capability approach presents a number of personal conversion factors, including characteristics of the head of the household (employment status and education) and characteristics of the entire household (e.g. life stage, family size, household income and financial assets), that enable the evaluation of debt uptake amongst households. These personal conversion factors were selected for the current study as longitudinal information for these were readily available from the research instrument used for the study and aligned with the factors identified in the literature review. Empirical literature on personal conversion factors that influence debt uptake of households has received considerable attention worldwide as evidenced by the array of research projects undertaken, particularly in developed countries. Household head characteristics will first be dealt with followed by some characteristics of the household in the next section.

Household head characteristics

Employment status

Being employed provides households the opportunity to access debt should they be able to adhere to the relevant affordability criteria applied during the credit assessment. The type of employment, namely, employed or self-employed, could, however, result in different outcomes towards debt attainment. Heads of households who are employed are in a position to earn income and those who are permanently employed have more stable streams of income than their self-employed counterparts who have income streams that may be more unstable. Vandone (2009) and Costa and Farinha (2012) found that being permanently employed is positively related to the amount of debt held. Self-employed people are more likely to make use of mortgage debt (Albacete & Lindner 2013). Costa and Farinha (2012) advise that self-employed or economically inactive people have a lower probability of having mortgages, but not of having other debts. Magri (2007) identified that although self-employed workers have a greater tendency of applying for

credit, they are more likely to be rationed by lenders. Bover et al. (2014) state that being employed is associated with a higher likelihood of holding secured debt. Henderson and Scobie (2009) reported that those who were unemployed or out of the labour force had lower levels of debt than those who were in employment. Thus, unemployed headed households are likely to face constraints when applying for credit.

Educational attainment

Magri (2007:401) found that education, which should reflect the income profile during the life cycle, is important in determining the supply of debt by institutions. Therefore, the better educated a person is, the steeper his or her income. Overall, the level of debt increases positively with education as this is also in line with an expectation of an increasing income stream (Albacete & Lindner 2013; Bover et al. 2014; Vandone 2009). Chien and DeVaney (2001:177) reported that across all adult age categories, those with an education had a positive attitude towards borrowing. Fabbri and Padula (2004) mentioned that the more educated individuals hold more debt and are more likely to apply for a loan. Henderson and Scobie (2009) advised that having higher absolute debt levels is positively associated with having a degree. Households headed by a higher educated individual are therefore more likely to obtain debt.

Household characteristics

Life stage

Personal conversion factors that are generally used in constructing life stages include age of the head of the household, marital status and number of dependent children (Baek & Hong 2004:363; Rank 2008: ES-2; SAARF 2012; Schooley & Worden 2010:270; Wilkes 1995:31). The literature reveals various opinions on how life stages should be categorised; however, consensus exists that income and expenditure patterns of a household will vary according to life stage (Gourinchas & Parker 2002:49; Lafrance & LaRoche-Côté 2012:4; Lee, Park & Montalto 2000:81; Oksanen, Aaltonen & Rantala 2016; Venter & Stedall 2010:6; Yilmazer & DeVaney 2005:287). Baek and Hong (2004) report that life stage is more significant in explaining instalment debt as compared with credit card debt. The reasoning behind this is that instalment debt is acquired for a specific purpose, that is, buying a motor vehicle or funding education. On the other contrary, credit card debt is used for a variety of purposes regardless of the life stage of the household (Baek & Hong 2004). The life stage of the household may therefore impact certain types of debt uptake.

Family size

Finney, Collard and Kempson (2007) concluded that their research is consistent with previous research in that there was a distinct relationship between the presence of more children (larger family size) and increased debt uptake. This can be considered as a proxy for family needs. Yilmazer and DeVaney (2005) determined that the number of children living in the household is positively related to the holding of mortgage debt, but negatively related to holding credit card debt. Albacete and

Lindner (2013) indicated that larger families are more likely to take out mortgage loans. Fabbri and Padula (2004) showed that families with a larger household size are more likely to apply for a loan. Costa and Farinha (2012) similarly found that households having children in the household are more likely to have debt, and in particular mortgage debt. However, the number of family members did not seem to be correlated with the probability of having more mortgages, but rather with the probability of having other debts.

Income

Albacete and Lindner (2013), Bover et al. (2014), Costa and Farinha (2012), Fabbri and Padula (2004), Finney et al. (2007), Henderson and Scobie (2009) and Lindquist et al. (2014) found that debt holding is positively determined by higher levels of income. Yilmazer and DeVaney (2005), when looking at the different types of debt, determined that household income is positively associated with holding other debt, but negatively associated with holding mortgage debt, credit cards and instalment debt. Magri (2007) and Chien and DeVaney (2001:177) suggested that household income is positively correlated with the probability of demanding a loan. It is apparent that households with higher levels of income are more likely to have higher debt levels as they tend to have greater access to debt products.

Financial assets

Yilmazer and DeVaney (2005) revealed that financial assets have a negative effect on the probability of holding any type of debt. However, there are a number of other researchers who have contrasting opinions. Fabbri and Padula (2004) determined that households that are able to pledge more collateral have larger amounts of debt. Henderson and Scobie (2009) agreed with this viewpoint and stated that higher absolute debt levels are associated with higher levels of assets. The findings of Meng and Mounter (2009) indicate that financial assets have a significant positive effect on household debt. Costa and Farinha (2012) found that households holding real assets with higher values have higher participation rates in the mortgage market. Financial assets therefore serve as a source of funding in the form of collateral for household debt.

Research design

Research approach and method

Research suggests that household debt follows a familiar life cycle pattern. As mentioned by Tippet (2010), the life cycle hypothesis is useful in that it introduces the element of time and explains a process that unfolds over the life course. Various pertinent studies have supported the view that the life cycle hypothesis is useful in providing an explanation for the broad consumption behaviours of households (Baek & Hong 2004:381; Carroll & Summers 1991:335; Cox & Jappelli 1993:209; Crook 2001:90, 2003:25; Schooley & Worden 2010:273). This broad consumption behaviour has the following objective: the purpose of borrowing is to smooth consumption income to achieve marginal utility of consumption over time (Schooley & Worden 2010).

Based on this 'life-cycle/permanent income' (LC-PI) hypothesis, there is consensus that debt increases with age, reaches a maximum during the working life and then declines as retirement approaches (Bover et al. 2014; Cox & Jappelli 1993; Crook 2001, 2003; Debelle 2004; Finney et al. 2007; Magri 2007; Tippet 2010). The proportion of debt held and the age at which debt levels are the greatest vary from one country to another. The literature reveals that the age at which debt peaks can be anywhere between 25 and 44 years. Finney et al. (2007), using data from the UK Baseline Survey of Financial Capability 2005 and the Survey of Over-Indebtedness in Britain 2002, found that young adults are particularly susceptible to social pressure to consume and they are prepared to take on debt for consumption.

Magri (2007:401) argues that the head of the household's age influences the demand for debt instead of just being a variable that influences the lender's choice, therefore not actually being of importance in the bank's decision on the supply side. This implies that debt will be lower when the individual is younger, will reach a maximum and then decline as the individual nears retirement. The age of the household head was thus used as a proxy for time for the purpose of this article, indicating the debt uptake of households as they age and move through the life cycle. This article follows a deductive research approach to empirically test the relevance of the LC-PI hypothesis in debt uptake amongst the youth in South Africa. More specifically, it considers the impact of personal conversion factors as identified from the literature.

Research instrument

Given the paucity of publicly accessible micro-level debt data in South Africa, the researchers attempted to construct a longitudinal database from secondary data to establish, from a life course perspective, debt product uptake by age of a youth cohort in South Africa. The South African Audience Research Foundation's All Media and Products Survey (SAARF AMPS) was deemed appropriate for the analysis as it provides comparable multi-media, multi-product and multi-brand usage information that reflects the entire complex society of South Africa and it covers the total adult population of South Africa sampling approximately 25 100 South African adults (aged 15 years and older) annually (SAARF 2013). Variables included in the AMPS include, *inter alia*, a variety of demographic factors (such as age, employment status, life stages, educational attainment and family size), product usage (such as financial and non-financial products and thus including debt product usage) and several other attributes and attitudes.

Research procedure and ethical considerations

With the identified aim to consider the impact of personal conversion factors on the debt uptake of young households (18–32 years) as they age, the AMPS databases for the period 1999–2013 were utilised. Although youth is defined as people between the ages of 15 and 34 years (Stats SA 2014), for the

purpose of this article the data were collected from 1999 until 2013, thus we could only include people aged 18–32 years.

The individual year data sets of the biannual surveys were considered valid and reliable owing to the ethical approach applied during the data collection, data cleaning and data preparation processes followed by SAARF. Ethical approval for purposes of this article was also obtained from the relevant institutional research committee. Neural networks were run to confirm that the individual data sets were stable and viable, given that the methodology allows analysis of the underlying dynamics in a data set with the aim of uncovering the level to which there are high levels of structural integrity. Results from the neural network analyses indicated that the error predictions of the individual data sets for all the years were within the acceptable limits (entropy levels of below 5%).

Following the favourable results of the neural network analyses with respect to the structural integrity of the individual years' AMPS data sets, each year's AMPS data were filtered based on the age of the household head to get the view of the young household cohort as they age, and the data for selected variables combined into one data set. This allowed for a final sample size of 8841 respondents covering the period 1999–2013 (Table 1).

Extensive data preparation steps were conducted on the combined data set ranging from visual inspection of the data to a series of descriptive analysis. Following the visual inspection, a neural network analysis was conducted on the combined data set to reflect the prediction error and to determine the quality of the complete data set. The results from this neural network indicated that the combined data set was stable as

the average incorrect prediction for training was 3%, and for testing it was 2.9%, which is well below the generally acceptable level of 5% of entropy. The data used for the analysis were therefore deemed to be valid, reliable and stable.

Description of sample

Not all respondents in the extracted sample of 8841 had debt products. Figure 3 shows the distribution of the various debt types held by those who had debt. As can be viewed from this illustration, the majority of the young households included in the sample tend to have credit cards from the age of 18 years (or possibly younger), while mortgages and other types of debt, for example, home loans and vehicle finance, only come into play at a later age. This could be ascribed to the impact of the life cycle on a household where an individual might be a single person household that is studying at the younger ages, but then they get married, buy a house and have children, all necessitating various types of debt.

In addition to the debt uptake, the distribution of the households included in the sample based on the variables included in the regression models indicates that as respondents grow older, they move from being at-home singles to becoming young families with respect to life stage and a greater proportion find themselves in full-time employment, mainly in clerical and sales or services occupations. A small proportion of respondents are self-employed. As respondents get older, a greater proportion of respondents also obtain a diploma, degree or professional qualification; however, most of the sample only had a matriculation education. Families mostly consist of 1–4 people. The majority of respondents come from households in lower income groups, and the number of financial assets held increases as respondents become older.

TABLE 1: Sample of respondents.

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Age	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Sample size	515	469	839	953	702	693	642	616	424	452	545	503	559	403	526

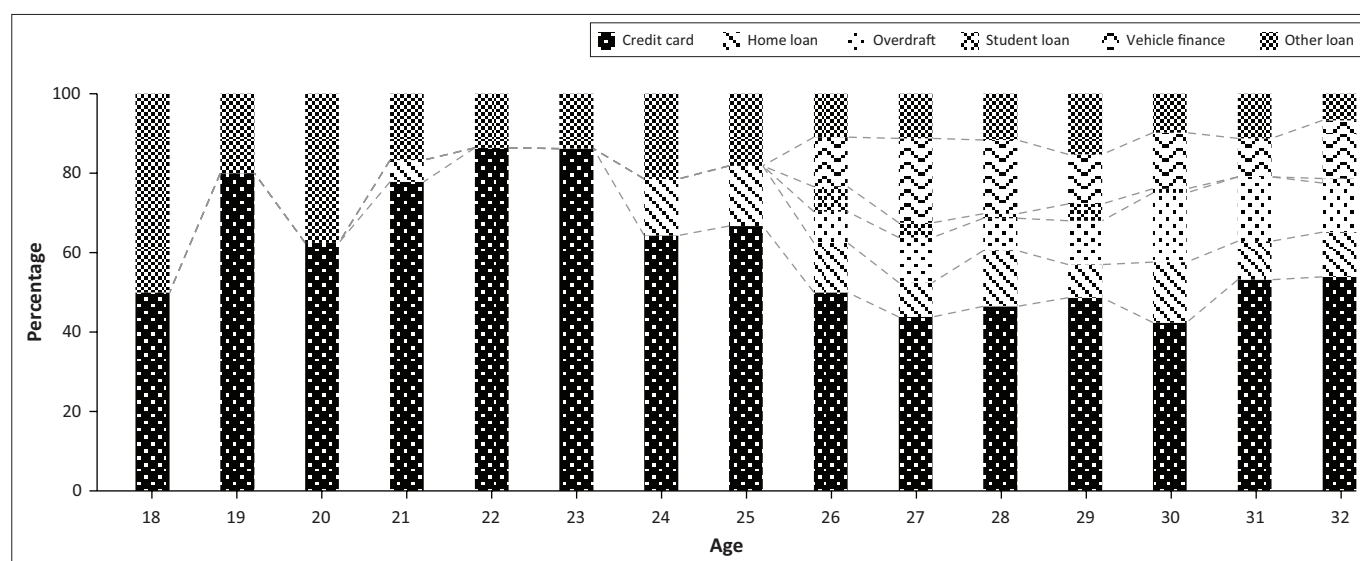


FIGURE 3: Overall debt usage breakdown of the sample.

Statistical analysis

Inferential statistics were used by means of Cox proportional hazards regression models to test the research hypothesis. This method was used as it is an event history method that enables the researcher to predict the length of time it takes for an individual to take up a particular debt product. Cox (1972) indicated that the simplest form of proportional hazards regression modelling is to assume an underlying exponential distribution. Such an assumption is valid for the purpose of this specific article where debt product take-up appears to grow exponentially as a person ages from about 18 to 32 years. Furthermore, the categorical nature of the regressors necessitated the application of the Cox proportional hazards models as this model has less restrictive assumptions regarding distributions of regressors (Rodríguez 2007). The decision rule used to evaluate the research hypothesis is based on the standard normal distribution curve that implies that if $p < 0.1$ with respect to 84.13% of independent variables, sufficient evidence exists in favour of the research hypothesis (Bless & Kathuria 1993).

Table 2 provides a description of the dependent and independent variables included in the Cox proportional hazards regression models. The literature indicated that different relationships exist between the type of debt and personal conversion factors. The different types of debt available in the AMPS data set were therefore used as dependent variables to distinguish possible differences in these relationships.

The model to be estimated is specified as:

$$h_i(t) = h_0(t) \cdot [\exp(\beta_1 \text{Work status}_i + \beta_2 \text{Self-employed}_i + \beta_3 \text{Occupation}_i + \beta_4 \text{Education}_i + \beta_5 \text{Life stage}_i + \beta_6 \text{Family size}_i + \beta_7 \text{Household income}_i + \beta_8 \text{Financial products}_i + \varepsilon)]$$

TABLE 2: Variable descriptions.

Variable from literature	Variable in model as from AMPS data set	Description
Dependent		
Debt usage	Credit card	Binary variable indicating whether the household has a credit card
	Home loan	Binary variable indicating whether the household has a home loan
	Overdraft	Binary variable indicating whether the household has an overdraft facility
	Student loan	Binary variable indicating whether the household has a student loan
	Vehicle finance	Binary variable indicating whether the household has vehicle finance
	Other loans	Binary variable indicating whether the household has any other loans
Independent		
Employment status	Working status	Categorical variable indicating whether the household head is employed (full-time/part-time), unemployed or not working (student, housewife and retired)
	Self-employment status	Binary variable indicating whether the household head is self-employed
	Occupation	Categorical variable indicating the type of occupation held by the household head: Administrative and Managerial; Agriculture; Artisans and Related; Clerical and Sales/Managerial; Production and Mining; Professional and Technical; Service; Transport and Communication or Other
Educational attainment	Level of education	Categorical variable indicating the level of education of the household head ranging from no schooling to tertiary and technical qualifications.
Life stage	Life stage	Categorical variable indicating the life stage of the household: at-home singles; young independent singles; young couples; young families; single-parent families and mature families
Family size	Family size	Variable indicating the total number of men and females living in the household
Income	Household Income	Categorical variable indicating the level of household income based on identified income groups
Financial assets	Number of financial assets	Categorical variable constructed based on whether the household held any of the following financial assets: unit trusts, stock exchange, ATM card, debit card, investment/deposit accounts, savings, retirement annuity and/or total endowment (endowment with life cover and endowment with no life cover)

AMPS, All Media and Products Survey; ATM, Automatic Teller Machine.

where the rate of occurrence of debt take-up of a particular type of debt is the product of two factors, namely, the baseline hazard and an exponential function which describes the effect that takes place because of the covariates as identified in the literature (SPSS Inc. 2015). The covariates are not constant over time, as changes in, for example, the employment status of the household head may take place as he or she ages. Furthermore, for purposes of this article, i refers to the specific debt product, t represents the time-varying element as proxied by the age in each of the years as shown in Table 2 and ε represents the residual.

When assessing the results of the Cox regressions analyses, the statistical significance of the relationship and the odds ratio are of importance. An odds ratio greater than 1 indicates a greater likelihood for the specific category of the independent variable to experience the hazard (take-up debt) when compared with the specified reference category, while an odds ratio below 1 indicates a smaller likelihood. Statistical significance of the covariates was considered at 10%, 5% and 1% levels, respectively.

Ethical considerations

Ethical clearance was obtained from the Ethics Review Committee of the School of Accounting Science, University of South Africa (Ref. #: 2013/CEMS/SAS/0012).

Results

Table 3 shows the results following Cox regression analysis of each of the identified debt types. Analysis in this section is conducted to show the situation concerning a typical young household, and the interpretation is based on the statistical significance and odds ratios.

TABLE 3: Results of Cox regression analysis.¹

	Personal conversion factor			Credit cards			Home loans			Overdraft			Student loans			Vehicle finance			Other loans			
	β	Sig.	Exp (β)	B	Sig.	Exp (β)	B	Sig.	Exp (β)	B	Sig.	Exp (β)	β	Sig.	Exp (β)	β	Sig.	Exp (β)	β	Sig.	Exp (β)	
Working status																						
Working full-time	1.085	0.011	2.960	10.683	0.848	43602.266	1.553	0.280	4.726	-8.174	0.913	0.000	1.297	0.294	3.660	2.297	0.013	9.944				
Working part-time	0.535	0.270	1.707	10.389	0.853	32515.830	1.271	0.414	3.564	-12.709	0.867	0.000	1.308	0.325	3.699	2.303	0.018	10.002				
Not working – housewife/student/retired	1.097	0.000	2.996	9.408	0.866	12183.118	0.684	0.583	1.983	-0.283	0.816	0.754	0.753	0.383	2.123	2.458	0.001	11.677				
Not working – unemployed	-	-	1.000	0.136	0.656	1.145	-	1.000	-	1.000	-	-	-	1.000	-	1.000	-	1.000				
Self-employed																						
Self-employed	-0.051	0.724	0.950	0.113	0.701	1.119	0.304	0.335	1.356	0.888	0.265	2.430	-0.747	0.045**	0.474	0.066	0.827	1.068				
Occupation																						
Occupation	-	0.056*	-	-	0.183	-	-	0.074*	-	-	0.994	-	-	0.540	-	-	0.466	-	-			
Administrative and managerial	0.117	0.765	1.124	-0.555	0.410	0.574	0.464	0.665	1.590	7.428	0.921	1681.771	0.526	0.615	1.692	-0.350	0.621	0.705				
Agriculture	-0.041	0.937	0.959	-1.294	0.266	0.274	0.921	0.434	2.512	1.015	0.993	2.759	-0.184	0.897	0.832	-0.089	0.923	0.915				
Artisans and related	-0.063	0.877	0.939	-1.076	0.169	0.341	0.019	0.987	1.019	0.196	0.998	1.217	-0.073	0.947	0.929	-0.981	0.205	0.375				
Clerical and sales/managerial	0.431	0.246	1.539	-0.767	0.241	0.465	0.776	0.458	2.173	0.124	0.999	1.132	-0.356	0.737	0.701	-0.028	0.965	0.973				
Production and mining	-0.008	0.985	0.992	0.049	0.943	1.051	0.458	0.684	1.580	0.459	0.996	1.582	-0.138	0.899	0.871	0.264	0.688	1.303				
Professional and technical	0.186	0.619	1.205	-1.030	0.109	0.357	-0.328	0.757	0.721	8.404	0.911	4464.850	0.197	0.850	1.217	-0.367	0.570	0.693				
Service	-0.230	0.569	0.795	-1.047	0.160	0.351	-0.401	0.732	0.670	0.266	0.997	1.304	-0.059	0.957	0.943	0.162	0.799	1.176				
Transport and communication	-	-	1.000	-	-	1.000	-	1.000	-	-	-	1.000	-	1.000	-	-	-	1.000				
Level of education																						
Level of education	-	0.013**	-	-	0.342	-	-	0.340	-	-	0.331	-	-	0.996	-	-	0.294	-	-			
No schooling	-11.567	0.974	0.000	-9.543	0.983	0.000	-11.060	0.989	0.000	-2.329	0.992	0.097	-10.459	0.989	0.000	-11.112	0.981	0.000				
Some primary school	-11.306	0.958	0.000	-8.790	0.972	0.000	-10.453	0.983	0.000	-2.950	0.982	0.052	-9.796	0.982	0.000	0.524	0.633	1.688				
Primary school completed	-11.217	0.951	0.000	-9.216	0.962	0.000	-10.242	0.979	0.000	-3.634	0.981	0.026	-9.720	0.979	0.000	-11.261	0.971	0.000				
Some high school	-0.924	0.002	0.397	-0.155	0.820	0.856	-0.811	0.913	0.000	-1.199	0.960	0.301	-0.505	0.440	0.604	-1.025	0.060	0.359				
Matric	-0.083	0.681	0.920	0.230	0.666	1.258	0.063	0.914	1.065	4.188	0.836	65.911	-0.206	0.644	0.813	0.052	0.897	1.053				
diploma/degree/professional	0.103	0.602	1.109	0.874	0.084	2.396	0.855	0.120	2.352	6.575	0.744	716.773	-0.191	0.652	0.826	-0.075	0.856	0.928				
Secretarial/technical/artisan training/other	-	-	1.000	-	-	1.000	-	1.000	-	-	-	1.000	-	1.000	-	-	-	1.000				
Life stage																						
Life stage	-	0.000***	-	-	0.023**	-	-	0.936	-	-	0.642	-	-	0.339	-	-	0.081*	-	-			
At-home singles	-	-	1.000	-	-	1.000	-	-	1.000	-	-	1.000	-	-	1.000	-	-	1.000				
Young independent singles	-0.247	0.146	0.781	1.475	0.164	4.372	0.082	0.877	1.085	-0.077	0.928	0.926	0.094	0.837	1.099	0.234	0.528	1.264				
Young couples	-0.397	0.026	0.672	2.056	0.048	7.816	0.048	0.927	1.049	-1.325	0.275	0.266	-0.656	0.191	0.519	0.575	0.126	1.777				
Young family	-0.826	0.000	0.438	2.481	0.015	11.959	-0.279	0.563	0.756	-1.300	0.144	0.273	-0.121	0.774	0.886	-0.304	0.400	0.738				
Single-parent family	-0.982	0.000	0.375	1.302	0.247	3.677	-0.356	0.533	0.700	-0.594	0.546	0.552	0.401	0.396	1.494	-0.498	0.263	0.608				
Mature family	-11.834	0.944	0.000	2.789	0.057	16.266	-10.991	0.981	0.000	-6.430	0.913	0.002	-11.735	0.979	0.000	0.583	0.587	1.792				
Family size																						
Family size	-0.090	0.027**	0.914	-0.307	0.022**	0.735	-0.001	0.990	0.999	0.204	0.221	1.226	-0.101	0.265	0.904	0.028	0.682	1.028				
Household income																						
Household income	-	0.019**	-	-	0.030**	-	-	0.087*	-	-	0.342	-	-	0.000***	-	-	0.004***	-	-			
R 1–R 9999	-	-	1.000	-	-	1.000	-	-	1.000	-	-	1.000	-	-	1.000	-	-	1.000				
R 10 000–R 19 999	0.359	0.013	1.431	0.479	0.181	1.615	0.954	0.034	2.597	-0.326	0.685	0.722	1.832	0.000	6.248	0.072	0.778	1.075				
R 20 000 +	0.421	0.008	1.523	-0.245	0.559	0.783	0.633	0.191	1.883	-1.319	0.185	0.267	1.912	0.000	6.765	-0.935	0.008	0.393				
Number of financial assets																						
Number of financial assets	0.546	0.000***	1.726	0.695	0.000***	2.004	0.566	0.000***	1.762	0.518	0.015**	1.678	0.643	0.000***	1.902	0.732	0.000***	2.079				

*, Significant at 10% level.
 **, significant at 5% level.
 ***, significant at 1% level.

1. Reference categories for each categorical variable are as follows: Life stage: At-Home Singles; Housing assets: Rented; Level of education: Secretarial/technical/artisan training/other; Household income: R 1–R 9999; Work status: Unemployed; Occupation: Transport and Communication.

The results for credit cards suggest that working status, occupation level, the level of education of the household head, life stage, family size, household income level and the number of financial assets held all have a statistically significant impact on the take-up of this form of debt. Self-employment status was not found to be statistically significant for credit cards. Furthermore, households where the household heads have full-time employment are 2.96 times more likely than unemployed household heads to take up a credit card, followed by those who are regarded as economically inactive and who are mainly students in the sample. Households where the household head is employed in clerical, sales, professional, technical or administrative, and managerial occupations are more likely to take up a credit card than those in transport and communication occupations. Higher levels of education of the household head tend to increase the likelihood to take up credit cards, with households headed up by individuals who hold a diploma, degree or professional qualification and those with secretarial, technical or artisan training having similar odds. As households move to the next life stage, their likelihood of taking up a credit card decreases. In contrast to the findings from the literature, smaller families tend to use credit cards more. Households with higher income levels are more likely to take up credit cards than those from lower income groups. Seemingly, the likelihood of credit card take-up also grows as the number of financial assets held increases.

The results for home loans indicate that life stage, family size, household income level and the number of financial assets held all statistically significantly impact the uptake of a home loan. As households move to the next life stage, becoming more independent and starting families, the likelihood of a home loan increases. Young and mature families are, respectively, 11.96 and 16.27 times more likely to have a home loan than at-home singles. In contrast to the findings from the literature, smaller families tend to use home loans more. Households in the middle-income group are 1.62 times more likely to take up a home loan than those in the low-income group. Having more financial assets also increases the odds of having a home loan.

Concerning overdraft facilities, the results show that occupation, household income level and the number of financial assets influence the uptake in a statistically significant manner. Those households where the household head is working in agriculture or clerical and sales occupations tend to be more than twice as likely as those in transport and communication occupations to take up an overdraft facility. Households with higher income levels are more likely to have an overdraft facility than those from lower income groups. A greater number of financial assets increases the likelihood of using an overdraft facility.

The results for student loans suggest that only the number of financial assets held statistically significantly impacts the uptake of this type of credit. Households that have a greater number of financial assets were more likely to take up a student loan.

The vehicle finance results show that self-employment, household income and the number of financial assets statistically significantly impact the uptake of vehicle finance. Households where the household head is self-employed are 0.47 times less likely to take up vehicle finance than those where the household head is not self-employed. Furthermore, households that have higher levels of household income are more likely to use vehicle financing. More financial assets also increase the likelihood of uptake of vehicle financing.

Regarding other loans, the results indicate that working status, life stage, household income level and the number of financial assets all have a statistically significant impact on the uptake thereof. Households where the household head is employed or economically inactive are more likely to have other loans than those where the household head is unemployed. Young and single-parent families are less likely to make use of other loans than at-home singles, while young independent singles, young couples and mature families have a greater likelihood of other loans uptake when compared with at-home singles. Households from higher household income groups are less likely to utilise other loan facilities. Like all other types of debt analysed, as the number of financial assets held increases, so does the uptake of other loans.

From the results of this article, it is evident that the identified personal conversion factors have a statistically significant impact on debt uptake, providing support to the research hypothesis. The underlying reasons for personal conversion factors impacting significantly debt uptake amongst the household could be explained by the fact that as the young households become older, their levels of education improve. They enter the job market, become involved in relationships, enter marriage, earn higher incomes, become more financially active and take up a wider range of credit projects which all contribute to increasingly higher levels of credit uptake.

Discussion

Outline of results

As stated at the beginning of this article, the purpose of this article was to determine which personal conversion factors are statistically significant determinants of debt uptake amongst young households in South Africa and to test the stated hypothesis that personal conversion factors have a statistically significant impact on different types of debt uptake by young households. In terms of the stated decision rule governing the hypothesis testing, statistically significant impacts had to be found with respect to at least 84.13% of independent variables in each respective regression (Bless & Kathuria 1993). Figure 4 shows a heatmap summarising the results from Table 3. The conversion factors that were found to be statistically significant are highlighted, where the colour intensity indicates the level of significance. The darkest cell indicates significance at a 1% level, the medium shading indicates significance at a 5% level and the lightest shading indicates significance at a 10% level. It can be seen

Variable	Credit cards	Home loans	Overdraft	Student loans	Vehicle finance	Other loans
Work status	■					■
Self-employed					■	
Occupation	■		■			
Level of education	■					
Life stage	■	■				■
Family size	■	■				
Household income	■	■	■		■	■
Number of financial assets	■	■	■	■	■	■

Note: Intensity of shading indicates level of significance (darker shade significant at 1% level and lighter shade significant at 10% level).

FIGURE 4: Statistically significant variables.

from Figure 4 that in terms of the research hypothesis for each of the six debt products, sufficient evidence only exists in favour of credit cards. Personal conversion factors therefore significantly impact credit card uptake by young households in South Africa. Only a limited number of personal conversion factors were found to statistically significantly impact the other debt products.

The results for credit card debt support the implications from the literature regarding debt uptake with respect to work status, level of education, household income and financial assets. It is interesting that from a South African perspective, the results for life stage and family size depict the opposite impact of what was proposed in the literature. South Africans who are in their earlier life stages and part of smaller families are more likely to use credit card debt. A possible reason for this is that larger households often reside in poorer rural communities. Therefore, these households may not qualify for credit card facilities or alternatively may make use of informal borrowing practices. Furthermore, based on the results for home loans and other loans, as the young household moves to their next life stage they tend to take up home loans and other loans and, therefore, credit card take-up takes place earlier in their lives.

Practical implications

The results of this study indicate the importance of the full financial inclusion of young households. Currently, this is a high priority not only for the South African government but also for a host of developing countries. Nevertheless, it is essential to ensure that inclusivity should be dovetailed with financial education to ensure that new entrants to the financial services industry are well-informed and empowered households. Should this not occur, the current debt stresses experienced by the young household could become a life-long burden. It is thus essential that the government and stakeholders continue in their endeavours to create financial well-being amongst the young households in South Africa. The findings of the empirical research supported the notion that the youth are indeed in need of intervention to ensure

that they are not caught up in a debt spiral, which could have everlasting effects on their financial future. Of particular noteworthiness was the surge in unsecured lending that seems to be gaining momentum as the product of choice by the youth. Unsecured debt is exceptionally useful for households in that it can be used for diverse purposes, including consumption spending. The results of this research provide a better understanding of the way in which the youth use debt, and may consequently assist stakeholders in regulating and understanding the debt industry. The results could also assist households to be aware of the times in the life cycle when they could be more susceptible to the financial pressure caused by making use of the various types of debt products, especially with regard to credit card debt.

Limitations and recommendations

Certain limitations may be related to the data collection and interpretation of the results. The debt products listed in the AMPS surveys were used for the analysis and therefore only formal debt held by households is included. The intention of this article was to follow the debt uptake trajectory of an 18-year-old as the person progresses through the life course until reaching the age of 32 years. To consider this approach, the samples were drawn separately for each year from SAARF and therefore this is not a panel study of the same individuals as they age, but rather a study of the cohort 18–32-year-olds. This limitation is weakened because the sampling plan followed by SAARF ensures a representative sample of the entire South African population in each year. Hence, it is deemed that the cohorts selected are typical of the population as a whole. The data set used for the analysis arises from data for different years and thus weighting could not be applied to generalise the results to a specific year's population figure. Secondary data also limit the user to the data that are available. This necessitated the use of some variables relating to the household head as a proxy for the household. The impact of, for example, another household member that is unemployed can, therefore, not be analysed, nor the specific family structure given the uniqueness of non-traditional structures in South Africa.

The causality and collinearity of certain personal conversion factors were not considered owing to the exploratory nature of the study. This provides scope for future analysis of the contemporaneous feedback of some conversion factors on others (such as education and income). This research can also be expanded by performing a follow-up study on the debt holding patterns of this cohort as they age beyond 32 years. Furthermore, a similar study could also be conducted by using an alternative survey instrument that deals with the monetary value of household debt given that the AMPS surveys only provide information regarding the different types of debt held. Alternative survey instruments or databases could also include more detailed information regarding the family structure. This work may also be expanded on to identify specific behavioural factors that influence the decision of the young households to take up

debt. This could assist in the development of a policy specifically aimed at young households.

Conclusion

By focusing on the role of the different personal conversion factors on the debt uptake of young households, this article furthers the discussion on the concept of financial capability, referring to the ability of young households to convert debt uptake opportunities into debt uptake outcomes (financial functionings). The main conclusion emerging from this article is that there are various personal conversion factors that influence debt uptake amongst young households, although such statistically significant relationships are not sufficiently pervasive to conclude that personal conversion factors impact all forms of debt uptake by young households. The results provide sufficient evidence to conclude that personal conversion factors influence the uptake of credit cards by young households in South Africa.

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Competing interests

The authors have declared that no competing interests exist.

Authors' contributions

B.d.C. was responsible for framework of the study; J.M. was responsible for methodology and S.M. was responsible for the literature review.

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Data sharing is not applicable to this article as no new data were created or analysed in this study.

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