

Southern Africa Labour and Development Research Unit



Measuring and profiling financial literacy in South Africa

by

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Abstract

Microeconomic theories of financial behaviour tend to assume that consumers possess financial skills necessary to undertake related financial decisions. We investigate this assumption by exploring the distribution of financial literacy among South Africans. In the absence of a standard measure, a financial literacy index is constructed for the country using data collected on attitudes (towards), access to and use of financial services over the period 2005 – 2009. We use the index to examine the extent to which differences in financial literacy correlate with demographic and economic characteristics. The Index reveals substantial variation in financial literacy by age, education, province and race. Overall, demographic characteristics contribute up to 10% of the financial literacy differences among individuals in South Africa. These results can be used to guide policy makers where to place more emphasis in terms of financial education for South Africans.

Key words: financial literacy, index, South Africa

JEL Classification: D14, G19, O55

1. Introduction

There is increasing focus on making formal financial services accessible to all members of society.¹ At the same time the financial sector is becoming innovative with products that might be considered complex and sophisticated for potential consumers. These developments place substantial demand on the individual in terms of financial decision making and management. In microeconomics, the consumption-saving trade-off assumes a rational and well-informed consumer who is capable of accumulating savings in times of high incomes and spending savings when income is low. This is in the framework of the life-cycle hypothesis advanced by Friedman (1957) and Modigliani and Brumberg (1954). This consumption smoothing over periods, whether two-period or in a dynamic multi-period life-cycle, assumes that the individual has perfect foresight. That is, they are able to predict the economic environment and subsequently undertake complex calculations on interest rates and discount rates in order to invest (Lusardi and Mitchell, 2014). If such a model is extended to incorporate concerns such as credit constraints, and the risk of death of economic agents, then the financial skills requirement becomes even more demanding (see for instance Gorbachev and Luengo-Prado, (2016)).

But this rational behaviour is questionable from the behavioural finance perspective.² Moreover, the economic environment, risk aversion of individuals, and the availability of social welfare systems have implications for the acquisition of financial skills necessary for financial decision making. Empirical work summarised in Lusardi and Mitchell (2014) shows that there are few individuals who possess the necessary financial skills required to make decisions to save or invest and consume between periods. But the definition of what constitutes financial skills, often referred to as financial literacy, is not standardised leading to varied measurement of the same concept. Huston (2010) describes financial literacy as a form of literacy that relates to one's proficiency in making financial decisions. So, how proficient are individuals to draw up saving and spending plans? How is this proficiency distributed in a population?

To answer these questions, we construct a financial literacy index for South Africa over the period 2005 -2009. Defining financial literacy as a composite of two domains, financial knowledge and financial capability, questions that fall in each of those domains are identified. These questions are selected from the Finscope³ surveys conducted on attitudes towards, and use of, financial services. We then use the Principle Component Approach to combine responses to these questions to obtain a score for each individual. This score is then used to investigate financial literacy differences across categories of the population and across regions.

The Index reveals substantial variation in the financial literacy of South Africans. The national average is 48.4 on a scale that ranges between 0 and 100. Below average financial literacy is found among Black South Africans, women, the young, individuals with less than high school education, with low incomes, and those living in the Eastern Cape Province. Overall, demographic characteristics account for up to 10% variation in financial literacy while geographical location only

¹ See for instance, the World Bank initiative on Universal Financial Access (UFA), Financial Inclusion 2020 (FI2020) and Alliance for Financial Inclusion www.afi.org

² See for instance Muradoglu and Harvey (2012), Garcia (2013)

³ www.finscope.co.za

explains an additional 0.7% of the variation. This implies that provincial differences in financial literacy are a result of demographic and economic differences between provinces.

The rest of the paper is organised as follows: Section 2 provides a brief overview of the literature. The methodological approach is provided in Section 3 and results are provided and discussed in Section 4. Section 5 concludes.

2. Review of Literature

The pioneering work of Lusardi and Mitchell (2007a) suggests a simple definition of financial literacy as *'the knowledge of a few but fundamental financial concepts'*. In a series of studies conducted in 14 countries,⁴ the term is defined explicitly as *'the possession of financial knowledge on interest rates, inflation, and risk diversifications, and numeracy skills'* (see Xu and Zia, 2012). In subsequent studies, and borrowing from capability theory, financial literacy has been defined more comprehensively to include both possession of knowledge and actions that accompany that knowledge. More recently, the Organisation for the Economic Cooperation and Development (OECD) has suggested that the concept should be broadened to constitute *'consumers' or investors' understanding of financial facts and concepts, and their ability to appreciate financial risks and opportunities to make informed choices, to know where to go for help and to take other effective actions to improve their financial well-being'* (OECD, 2009).

Following from the above definitions, measures have included: setting numeric questions and either counting the proportion of the population that gives correct responses, or weighting the responses to form a financial literacy index.⁵ Such an index is then used to investigate the distribution of the scores in a particular country as being synonymous with the level of financial literacy. Some patterns have emerged.

Using the proportion of correct answers to a set of 3 questions, Lusardi and Mitchell (2007a) find that financial literacy is low among women, the young, and the old in the USA. They also find that financial literacy is positively associated with income and education attainment. However, in Germany, Bucher-Koenen and Lusardi (2011) find no significant difference between the financial literacy levels of men and women using the same measure. They report however, a stark difference between the financial literacy of individuals in the Eastern and Western regions of the country. A similar regional finding is reported by Fornero and Monticone (2011) between the Northern and Southern regions of Italy, and in the northern half of the USA compared to states located in the eastern and southern parts (Bumcrot, Lin and Lusardi, 2011). In the USA, the regional differences are reported to be correlated with a state's poverty level. Klapper and Panos (2011) attribute the higher financial literacy levels exhibited by urban dwellers in Russia compared to their rural counterparts, to the high number of interactions, and hence knowledge diffusion in areas of high population density. Racial differences are also evident. For example, Crossan, Feslier and Hurnard, (2011) find that the Maori group in New Zealand have low levels of financial literacy, as do Hispanics in the USA

⁴ Azerbaijan, Chile, Germany, India, Indonesia, Italy, Japan, Netherlands, New Zealand, Romania, Russia, Sweden, USA, and West Bank and Gaza

⁵ See Hung et al. (2011) for a summary of the measures

(Lusardi and Mitchell, 2011b). These racial groups are both part of the minority groups in these countries.

In the context of middle-to-low income economies, financial literacy is defined in terms of financial outcomes and linked to holding a bank account.⁶ This follows arguments by researchers like Dragan, (2011) and Cole, et al. (2011) that individuals will only demand financial services and products if they have enough knowledge about them. Indeed the FinScope surveys report that one of the reasons why respondents in Malawi and Tanzania did not have bank accounts is that they had never heard of a savings account or that they didn't know how to open one. Lack of understanding of insurance products leading to low take-up has also been reported in countries like Guatemala, by Cohen and Young (2007), rural India, by Gine, et al. (2008), in Vietnam by Tran and Yun (2004), in Uganda and in Rwanda. But an outcome-based measure might lead to either an upward or downward bias due to selection into participating in the formal financial sector or due to capturing the extent of financial access. Indeed in the wake of broad based financial access, it is highly likely that individuals will hold products without necessarily understanding their functionality.

It is important to note that the lack of standardisation in the definition of financial literacy, and the subsequently different measurement of the concept, make cross-country comparisons problematic. Hence the need for more country specific studies. South Africa presents an interesting case study, in part due to the fact that no rigorous empirical work has been undertaken following financial sector transformation towards broad-based financial access in the country in the early 1990s. Secondly, the country exhibits both high-income and low-income country characteristics, which poses a challenge of which measure of financial proficiency to adopt. In the section that follows, the methodological approach to addressing this research gap is outlined.

3. Data and Methodology

We adopt a combination of Atkinson et al. (2006)'s and the OECD (2009)'s definition of financial literacy to align it to South Africa's financial sector characteristics. There are two financial literacy domains: financial knowledge and financial capability. Questions aligned to these domains are identified, the individual responses computed and the average scores cross-tabulated with demographic characteristics of the population. Principal Component Analysis (PCA) is then used to construct a composite index from the two domains as advocated for by the OECD. This allows for the profiling of the population using the average score of the Index. Finally, regression analysis is used to investigate the determinants of financial literacy.

Under financial knowledge, the emphasis is on the understanding of financial concepts, financial institutions, and financial regulations. In the FinScope surveys, respondents were asked about their knowledge and understanding of words or phrases in each of the above sub-categories. Responses were then coded as: 3=Heard of the word/phrase and know what it means; 2=Heard of the word/phrase but don't know what it means; 1=Never heard of this word/phrase. Since this domain tests whether one understands the terms and concepts presented, individuals who had heard of, but

⁶ See Xu and Zia (2012)

did not understand these concepts were considered to be in the same category as those who had never heard of them. Following this argument variables were re-coded to equal to one if a respondent had heard of and understood a particular financial term/phrase, and zero otherwise. In other questions, respondents were instead asked which financial areas they needed financial education on. This was considered to be a self-reported financial knowledge gap which was coded as a binary variable with 1=yes (if a respondent chose a particular financial term/concept/phrase) and zero otherwise. Subsequently, the coding of such questions was reversed for consistency. The following phrases were considered from the surveys:

- i. Knowledge and understanding of bad debt*
- ii. Knowledge and understanding of the National Credit Act (NCA)*
- iii. Knowledge and understanding of credit bureaus*
- iv. Knowledge of compounding interest (saving small amounts and investing overtime)*

Gap variables:

- a. Use of financial services and products - combining questions that related to selecting savings and investment products, insuring household contents and how to draw up and manage a budget (deals with day-to-day financial discipline)*
- b. Knowledge of life insurance*
- c. Knowledge of how to find out about one's credit worthiness*
- d. How interest rates work and are calculated*
- e. Trust banks- this question was frequently phrased as 'You do not trust banks'*

According to Kempson and Moore (2005), knowledge of financial terms, regulations and institutions is necessary, but not sufficient to measure the financial literacy levels of individuals, hence the financial capability domain. Financial capability is said to incorporate knowledge, skills and behaviour in five areas. These include: Making ends meet; planning ahead; choosing financial products and services; staying informed; and keeping track of one's finances. As is evident, the knowledge areas feed directly into this domain. The dataset used provides a range of questions corresponding to these areas. Respondents were presented with a range of statements and their responses were recorded as 'Agree', 'Disagree' or 'Don't Know'. Coding 1=Agree and 0=Disagree/Don't know, and selecting only questions that were consistent across surveys, resulted in the following seven statements to be considered for our study:

- i. You try to save regularly*
- ii. You are saving for something specific*
- iii. You are worried you won't have enough for retirement*
- iv. You go without basics so as to save*
- v. You love spending even if you have to borrow to do so*
- vi. You read the financial pages of newspapers and magazines*
- vii. When it comes to finances you prefer to speak to friends or family for advice.*

In our approach, we do not incorporate the holding of any product as a variable in the capability domain. Product holding can be a consequence of literacy or a reflection of financial access policy.

The latter is a plausible argument, given that post-Apartheid South African government undertook financial sector transformations in the form of broad-based financial access.

Responses to questions in the two domains of financial knowledge and financial capability were combined to construct a composite financial literacy index from the pooled surveys (2005-2009). The composite financial literacy index is thus constructed according to the expression below:

$$FLX_i = \sum_j \left[F_j \frac{(Q_{ij} - Q_j^-)}{S_j} \right] \quad \text{for } i=1, \dots, N \text{ and } j=1, 2 \quad (1)$$

where; FLX_i is the financial literacy score for individual i , Q_{ij} is the score in domain j for individual i , Q_j^- is the sample mean, S_j is the sample standard deviation and F_j is the eigenvector of the first principal component weights. The scores were re-scaled through a linear transformation for ease of interpretation. Analogous to socio-economic status indices, the higher the score, the higher the implied financial literacy level of the individual (see Vyas and Kumaranayake, 2006). For example, on a 0 - 100 index, an individual scoring zero has a financial literacy of zero (financially illiterate) while a score of 100 is equivalent to a financial literacy level of 100 (financially sophisticated). Thus the financial literacy profile of South Africans is obtained by comparing the mean financial literacy scores across the socio-economic and demographic characteristics of individuals in the sample, and weighting the data for national representativeness.

3.1 Summary of the data

The weighted descriptive statistics are provided in Table 1. The pooled data show a slightly higher proportion of females, at 52% compared to 48% males. Blacks make up almost 80% while the rest of the population groups make up the remaining 20%. The majority of the sample has some high school education (40%), the largest age group is the 18-29 year olds, with the oldest respondent being 92 years. More respondents were interviewed in urban areas (57%) with a regional distribution in favour of Gauteng, KwaZulu-Natal, Eastern Cape and Western Cape provinces. 27% of the respondents are formally employed, followed by pensioners, and the self-employed.

Table 1: Summary Statistics for the Data (2005-2009)

Variable		2005 N=3568	2006 N=3643	2007 N=3675	2008 N=3329	2009 N=3575	Pooled N=18694
Gender	Male	47.6	48.8	46.8	47.0	47.6	47.9
	Female	52.4	51.2	53.2	53.0	52.4	52.1
Race	Black	79.7	79.0	78.7	79.7	79.5	79.3
	Coloured	9.1	9.5	8.6	9.1	8.6	9.0
	Indian	2.1	2.2	2.1	2.0	2.1	2.1
Education	White	9.1	9.3	10.6	9.2	9.8	9.6
	No Education	2.8	5.9	3.8	1.3	2.3	3.5
	Primary School	17.1	16.7	12.1	10.7	10.7	6.5
	High School	67.1	64.8	70.1	72.0	72.2	70.7
Age Category	Post High School	13.0	12.6	13.9	16.0	14.8	40.8
	18 - 29 years	37.9	34.8	38.4	37.2	39.0	38.1
	30 - 44 years	31.8	34.6	38.4	40.1	37.9	35.7
	45 - 59 years	17.9	19.0	11.4	11.9	11.9	14.2
	60+ years	12.3	11.6	11.8	10.8	11.3	12.0
Province	Eastern Cape	14.1	13.9	12.3	13.0	12.6	13.5
	Free State	6.6	6.8	5.6	5.1	5.7	6.0
	Gauteng	21.8	21.9	24.6	23.6	22.1	22.1
	KwaZulu Natal	19.2	19.0	20.6	20.4	19.3	19.9
	Limpopo	10.9	10.3	9.4	8.5	9.4	10.2
	Mpumalanga	6.7	7.0	7.5	6.9	7.2	6.9
	Northern Cape	1.9	2.1	2.1	2.3	2.3	2.1
	North West	8.4	8.1	6.9	7.5	9.3	8.1
	Western Cape	10.4	10.9	10.9	12.8	12.0	11.2
	Geo-Area	Urban	53.1	61.2	63.4	66.3	64.9
Marital Status	Single	47.3	48.7	51.1	57.0	58.5	53.2
	Divorced	2.4	2.8	1.8	2.5	1.7	2.1
	Widowed	8.7	7.1	6.2	5.4	5.7	6.8
	Married	41.6	41.4	40.9	35.2	34.1	37.8
Source of Money	Formal	11.4	21.6	28.1	35.9	29.8	23.9
	Informal	21.0	39.3	34.4	33.4	36.4	32.9
	Grant	8.3	19.9	19.5	16.1	15.1	16.6
Personal Monthly Income	Up to R999	67.3	65.4	61.0	50.0	49.0	60.7
	R1000-5999	25.9	27.6	32.9	40.6	41.9	32.2
	R6000-9999	3.5	4.1	3.4	5.7	5.6	4.1
	R10000-24999	2.9	2.7	2.5	3.3	3.2	2.7
	R25000+	0.3	0.3	0.2	0.4	0.4	0.3
Employment Status	Pensioner	13.5	12.2	10.9	9.6	10.6	11.8
	Formal Employee	25.5	26.7	28.4	35.5	30.2	27.7
	Housewife	4.1	3.7	3.5	3.6	3.8	3.7
	Student	9.3	6.7	8.7	8.7	8.6	8.7
	Informally Employed	3.9	8.9	8.5	11.4	8.8	8.2
	Self Employed	31.3	7.3	8.3	6.7	7.1	11.8
	Unemployed	11.1	33.8	30.3	24.1	30.6	27.3

Note: The table shows the structure of the cross-sections and the pooled dataset, weighted to be nationally representative. Income is in 2009 rand terms. Wilk's lambda: 0.4235, F(176.0, 62397.7)= 85.23, Prob>F=0.0000a

About 60% of the sample earn a personal monthly income of less than R1000, with 16.5% grant recipients, and in some cases individuals hold more than one job. The average household size is four and about 60% of the sample earned a household income of less than R6000 per month. The data is weighted using the Statistics South Africa weights as benchmarks. This sample is therefore nationally

representative of the major population groups of the country and is balanced in terms of gender and region.

Table 2 shows the proportion of affirmative responses to the domain questions. Panel A shows that about 44% of the respondents reported knowledge of 'Bad Debt', 11% knew credit bureaus, and only 2% knew the National Credit Act (NCA) even though these terms are closely related.⁷ Knowledge of budgeting and interest rates was low, and respondents admitted to not trusting banks. About 24% claimed knowledge of how to use savings, insurance and investment products. On average, respondents scored five out of the nine points, with almost one third scoring between zero and four points. The mean score varies across the sample. As reported in Appendix A2, it is higher for men than for women, and the White sub-population scored the highest amongst the population groups, with seven points, followed by the Indian sub-group, at 6.4, the Coloured sub-group at 5.7 and the Black sub-group at 4.7. There is a slow but steady rise in score with increasing age, tapering off after 59 years. Individuals with less than matric scored below average while those with matric level of education and above scored above average, however students scored far lower than those in other occupation categories. Grant recipients answered up to four questions correctly, while scores increased with increasing personal income and household income. As expected, urban dwellers scored above average and higher than their rural counterparts, while individuals who were participating in the financial sector (currently banked) scored better than those who had never been banked over the period.

Table 2: Positive Responses for Financial Literacy Domain Questions

Panel A: Financial Knowledge	Number of Respondents	Percent
Bad-debt	8162	43.61
National Credit Act	434	2.32
Credit Bureaus	2029	10.84
Saving and Investing makes you secure	4481	23.94
How to Use Services and Products	2652	14.17
Interest Rates	347	1.85
Drawing-up and Managing a Budget	135	0.72
Life Insurance	36	0.19
How to Check Credit Worthiness	25	0.13
Trust Banks	154	0.82
None	263	1.40
Panel B: Financial Capability		
Save Regularly	8806	47.05
Save for specifics	734	3.92
Save at all Costs	820	4.38
Have enough for Retirement	3972	21.22
Spend wisely	3640	19.45
Panel C: Sources of Financial Information		
Friends and Family	11466	61.26
Financial Pages	1225	6.55
Other (financial advisers, money lenders, churches, employers, Schools, community)	6026	32.2

Note: The table shows the proportion of respondents who scored a point for a positive response to a particular question. 'None' implies that these respondents did not respond to any question and thus scored no point in a particular domain. This is also a balancing item. Data is weighted to be nationally representative. The weights are benchmarked to Statistics South Africa. **Source:** Authors' calculations from Finscope surveys 2005-

⁷ The NCA regulates formal credit transactions and it requires lenders to be registered but knowledge of 'Bad Debt' could imply a bad experience with credit either from formal or from informal sources

In the capability domain, Panel B shows that, 47% of our sample claimed to save regularly, yet only 19% alluded to spending wisely, and 21% said that they were not worried about having enough for retirement. The majority of the respondents scored between two and three points, with just about 1% scoring all or no points. Overall, the average score for the sample is three out of seven points. Decomposing the mean score by socio-economic and demographic characteristics, there is a similar pattern as in the knowledge domain. That is, scores are lower than average for Black South Africans, for women, for individuals with less than matric level of education and for rural dwellers. These results are reported in Appendix A3.

A key element in this domain is the source of financial information used by consumers⁸. The statistics in Panel C show that the majority of the respondents reported using 'friends and family' as a source of financial information, while 'financial pages' are rarely used.

Notice that if only one domain was to be considered as a measure of financial literacy (for example see Hung et al., 2009), then South Africans would be more financially literate using the knowledge domain than using the capability domain, going by the average score in each of these domains. Similarly, using the "Big Three", as in several studies (see Xu and Zia, 2012) would make the picture even worse, since Table 2 shows that only 1.8% of the sample reported knowledge of the interest rate concept while 23.9% reported knowledge of saving and investment, which is akin to the concept of a compounding interest rate.

4. Results

4.1 Profile of Financial Literacy

The constructed Financial Literacy Index combines the domains into a score that ranges between 0 and 100, with a mean of 48.4. Overall, the Index follows a normal distribution, with majority of South Africans around the country's mean. But the densities get flatter and fatter for any shift to the right of the national mean, implying that there are few financially literate individuals, and that those who are literate, had really high scores. Appendix A4 shows the density plots for within-in group differences in financial literacy by various categories.⁹ There is no visible difference in the distribution of financial literacy scores by gender, age group and geo-area. There are, however, substantial shifts in the distribution by education, marital status, personal income, and race. Higher income and education levels are associated with a shift to the right of the country's mean, reflecting above average financial literacy. The distribution for the Whites and the Asians is also skewed to the right while that of the Blacks and the Coloureds is skewed to the left.

To get a clearer view of the distribution, the with-in categories mean scores are provided in Figure 1. Lower than average levels of financial literacy are evident among women, black South Africans, those with less than matric (high school), and 18-29 year olds. This pattern is similar to

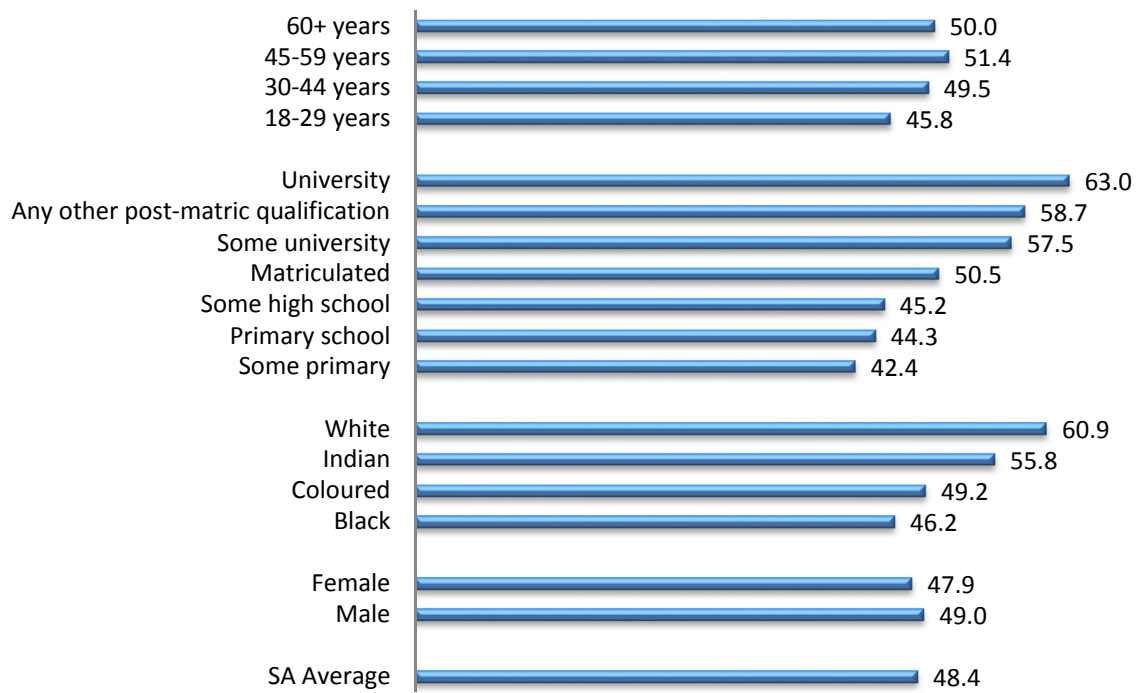
⁸ For example, Lusardi, Mitchell and Curto (2009) find a significant correlation between peers and communities as a source of information and higher levels of financial literacy among youths

⁹ All data are weighted by weights bench marked on Stats SA weights to make the statistics nationally representative. See full set of decomposition results in Appendix A5

those reported in studies for upper-middle income economies like the USA, Europe, Japan, and New Zealand, as well as in low-middle income countries such as India, Indonesia, West Bank and Gaza (see Xu and Zia, 2012 for a summary). Lusardi, Mitchell and Curto (2009) and Johnson and Sherraden (2006) found similar low levels of financial literacy among youths in the USA.

Financial literacy is high at higher levels of education and for individuals older than 30 years of age, slightly tapering off at 60 years. This finding is the inverted U-shape reported by Lusardi and Mitchell (2011a); Xu and Zia (2012); and Jappelli and Padula (2011). According to Jappelli and Padula (2011), this is evidence of a decline in cognitive ability in the latter years of an individual’s life.

Figure 1: Financial Literacy by Age, Education, Gender and Race

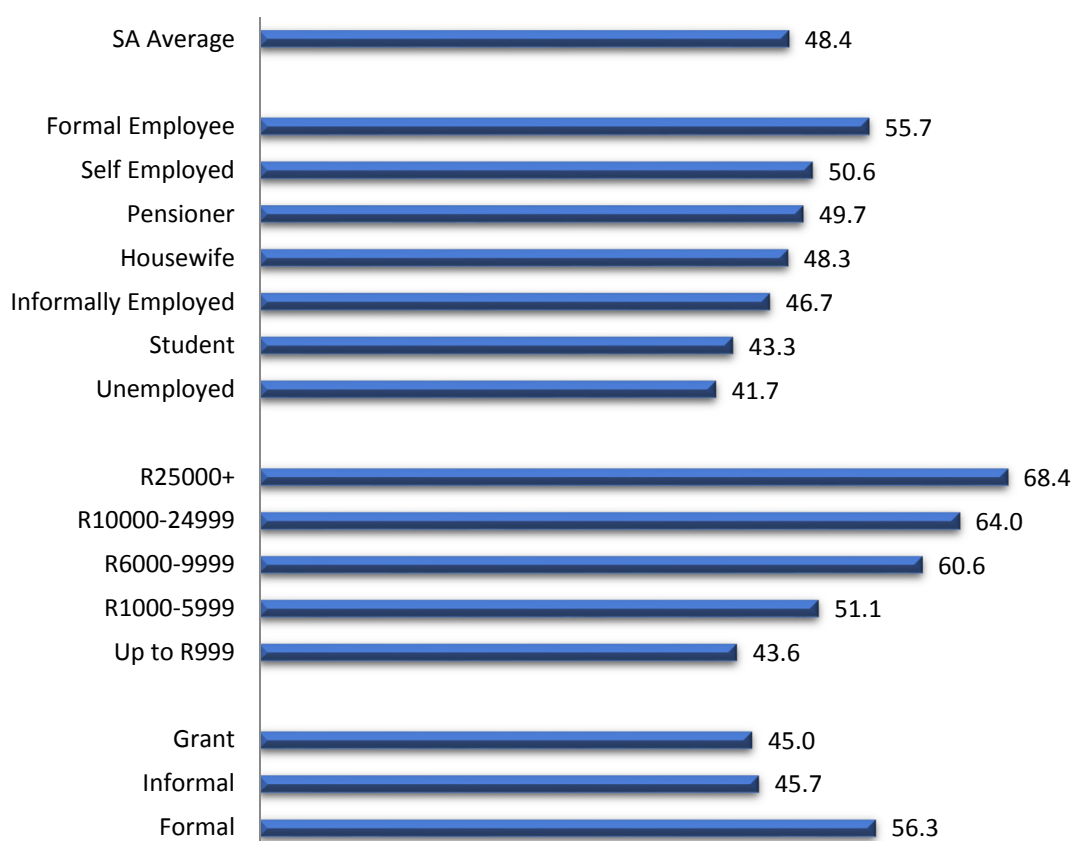


Note: The figure shows the mean financial literacy score in the age, gender, education and race categories. The data is weighted to be nationally representative, weights are benchmarked

Figure 2 disaggregates the Index values further by economic variables like: major sources of money, occupation, and income categories. On average, the formally employed, the self-employed and pensioners have above average financial literacy, while students and the unemployed score the lowest in the occupation category. Lower levels of financial literacy among students have also been reported by Beal and Delpachitra (2003) among Australian university students; Markow and Bagnaschi (2005); Mandell (1997); Lusardi, Mitchell and Curto (2009); Chen and Volpe (2002) among college students and young adults. Individuals receiving money through formal sources have higher scores while recipients of grants and income from informal sources, have below average scores. This difference could be due to the requirement by formal employers that employees use formal financial mechanisms to receive salaries and other employment benefits, which in turn requires financial proficiency. It is worth noting that social grants in South Africa are targeted at the poor and they are

means tested.¹⁰ This highlights the low financial literacy pattern observed among grant recipients. This is problematic as grant recipients are often offered many financial products.¹¹ Finally, financial literacy scores increase as income levels increase, a result similar to that found in most studies conducted in elsewhere, reflecting either the increase in demand for financial products and services that require financial proficiency, or an increase in affordability of investment in acquiring financial literacy.

Figure 2: Financial Literacy by Occupation, Income, and Source of Money



Note: The figure shows financial literacy scores by occupation, income and source of money. the data is weighted to be nationally representative, with weights benchmarked to Statistics S

In terms of regional distribution, Table 3 and Figure 3 show that Western Cape (52.5), Gauteng (52.4) and Kwa-Zulu Natal (50.1) have above average scores while Eastern Cape (43.5), North West (45.6) and Northern Cape (45.6) lag behind. Provinces with higher levels of financial literacy are also associated with lower levels of poverty ($P_0/P_1=5.74/0.013$, $4.87/0.014$, and $22.12/0.068$ respectively) while those with the lowest literacy levels also rank among the poorest

¹⁰ Grants include: Child support, Foster Care support, Care Dependency, Old Age support, Disability, War Veteran, Social Relief of Distress, and Grant-in-Aid. There are as many as 8 million grant recipients on average, per year. www.sassa.gov.za

¹¹ For instance, social welfare recipients in South Africa are paid through a bank account (see <http://newsroom.mastercard.com/press-releases/ten-million-sassa-mastercard-cards-issued-to-south-african-social-grant/>), while this same group is targeted by money lenders (see <http://www.kayafm.co.za/money-lender-targets-social-grant-beneficiaries/>)

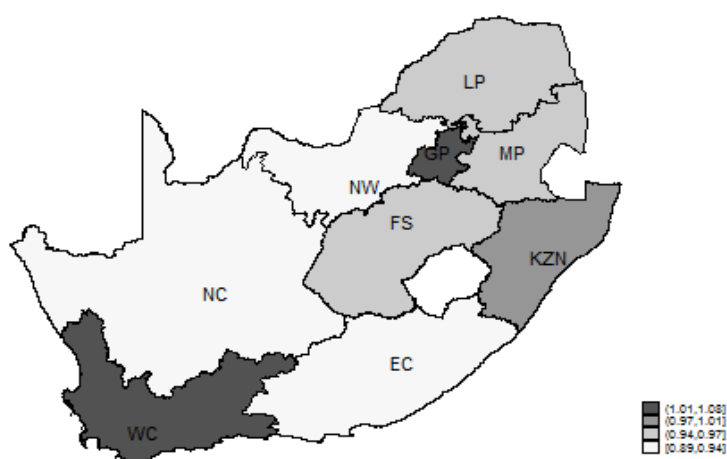
($P_0/P_1=34.02/0.111$, $26.13/0.072$ and $42.17/0.145$ respectively).¹² These regional results also mimic the racial distribution in the country. For instance Whites, who have the highest scores, are concentrated in the Western Cape and Gauteng provinces while Indians/Asians who follow closely, are concentrated in KwaZulu-Natal. On the other hand, the province of Eastern Cape is predominantly Black, while Northern Cape is predominantly coloured. These two population groups had the lowest financial literacy scores. In terms of economic activity, Gauteng and Kwa-Zulu Natal also happen to be the financial and business hubs of the country. Rural dwellers on average had lower financial literacy scores (46.24) than their urban counterparts (50.07). This finding is in line with those reported in almost all empirical studies on this subject, where the difference is attributed partly to the high interactions in densely populated areas such as urban areas, which allows for the diffusion of knowledge (Klapper and Panos, 2011).

Table 3: Provincial Ranking of Financial Literacy in South Africa

Rank	Province	Average Financial Literacy Score	Rank	Province	Average Financial Literacy Score
1	Gauteng	52.5	6	Free State	46.2
2	Western Cape	52.4	7	North West	45.6
3	KwaZulu Natal	48.9	8	Northern Cape	45.6
4	Limpopo	46.8	9	Eastern Cape	43.1
5	Mpumalanga	46.2			
SA Average		48.4			

Note: The table shows the average financial literacy scores per province and their ranking as a result thereof. The data is weighted to be nationally representative, with weights benchmarked to Statistics South Africa. **Source:** Authors' calculations from the FinScope surveys of South Africa 2005-2009

Figure 3: Provincial Financial Literacy Relative to the National Average



Note: The figure shows the relative distribution of financial literacy by province. The darker shades reflect higher financial literacy scores and they fade as the scores fall relative to the national average. **Source:** Authors' compilation from FinScope surveys 2005-2009

¹² P_0 is the head count poverty and P_1 is the poverty gap. See Woolard and Leibbrandt (2009) on these and other provincial poverty measures.

4.2 The Multivariate Correlates of Financial Literacy

The descriptive statistics show a positive association between financial literacy and several economic, demographic and geographic characteristics. However, there is a possible correlation between some of these characteristics themselves, for instance, province with race, and province with the rural dummy. To tease out the effect of each of these variables holding others constant, we conduct multivariate regression analysis. The dependant variable is the index of financial literacy, which is a continuous variable. Column (1) in Table 4 reports the estimated coefficients for a specification that includes all possible controls as used in similar studies such as Lusardi and Mitchell (2014). Models 2 and 3 are specified to tease out the correlation between provinces and the rural-urban effect. Results reveal that compared to Blacks, the levels of financial literacy of Whites and Asians are higher in all specifications and that this difference is statistically significant. Similarly, education levels above high school level (matric), income levels above R6000, being divorced, married or widowed are positively correlated with higher financial literacy scores. Significant racial influences have been reported by Bumcrot et al. (2011) in the USA; Crossan et al. (2011) in New Zealand; Alessie et al. (2011) in the Netherlands; Dragan (2011) in Bosnia-Herzegovina; and Xu and Zia (2012). The effect of marital status might in part reflect the nature of marriage contracts in the country or, as argues Hsu (2011), strategic acquisition of financial literacy following separation from or the death of a life partner.¹³ A similar effect of education and income has been reported by Behrman et al. (2010). The argument is that individuals in higher income brackets can afford the cost of acquiring financial literacy and thus seek more financial knowledge to better manage the financial wealth.

Whereas men have higher levels of financial literacy than women, this variable is not statistically significant. This result can be compared to a similar finding reported by Bucher-Koenen and Lusardi (2011) for East Germany, where gender did not matter in relation to an individual's financial literacy level. Furthermore, despite evidence of the inverted U-shape pattern often seen in the relationship between age and financial literacy, the estimation results show no statistical significance of the age variable. This result suggests that either age does not influence financial literacy in a South African setting, or that financial literacy related challenges cut across age groups.

Compared to Western Cape, residing in the Eastern Cape, Limpopo, North West or Northern Cape has a significantly negative influence on the financial literacy score. But rural or urban dwelling has no significant effect. This result does not change even when we exclude provinces (Model 2), but excluding the rural-urban dummy while retaining provinces increases the effect of provinces slightly. This rural-urban result is rather unusual when compared to other studies, however, we believe that the effect is probably captured at the provincial level. Indeed Bumcrot, Lusardi and Mitchell (2011) control for residence at state level in the USA and they find significant results. This rural-urban result is interesting and it shows the importance of the multivariate analysis.

These regression results generally confirm some of the correlations revealed in the descriptive statistics and they are generally similar to global patterns (see Lusardi and Mitchell

¹³ In South Africa, those married in community of property share equally in the wealth of the partnership. This includes financial obligations, such as debt and investments. Thus married individuals are more motivated to learn about finances or to fall victim to the financial mistakes of their spouses – but only if they are married under this regime

(2014) and Xu and Zia (2012)). In particular, they point to the significance of characteristics such as race, education, and region (province).

But several studies have found geographical locations to statistically influence financial literacy more than economic and demographic characteristics. To isolate these effects, we follow Raudenbush and Bryk (2002) and estimate a hierarchical linear model. In this approach, the interest is in the incremental explained variance between groups of variables. Here, financial literacy scores are regressed first on demographic characteristics and then geographical location added in the second level. The demographic variables considered are education, gender, income, marital status and race as these turned out to be statistically significant in the basic OLS, while the geographic characteristics include all provinces. Except for gender which is a binary variable, all other regressors are categorical variables for which dummy variables are created.¹⁴

¹⁴ This approach was used by Bumcrot, et al. (2011) to isolate the effect of the demographic variables from the geographical variations in financial literacy in the USA

Table 4: Multivariate Correlates of Financial Literacy in South Africa

Variable		(1) Includes All Covariates	(2) Excludes Provinces	(3) Excludes Rural Dummy
Gender (Male)	Female	-0.123 (0.444)	-0.0469 (0.445)	-0.116 (0.444)
Race (Blacks)	Coloured	0.873 (0.607)	0.719 (0.545)	0.903 (0.605)
	Asian/Indian	2.653*** (0.899)	4.057*** (0.827)	2.764*** (0.898)
	White	4.467*** (0.903)	4.525*** (0.906)	4.517*** (0.903)
Education (No Education)	Some Primary School	-3.855*** (1.244)	-3.857*** (1.232)	-3.803*** (1.244)
	Primary school	-2.748** (1.212)	-2.872** (1.206)	-2.696** (1.211)
	Some high school	-2.090* (1.094)	-2.094* (1.082)	-2.031* (1.093)
	Matriculated	-1.205 (1.202)	-1.077 (1.188)	-1.139 (1.200)
	Some university	3.739** (1.687)	3.476** (1.681)	3.822** (1.684)
	University completed	4.810*** (1.534)	5.032*** (1.526)	4.914*** (1.530)
	Other post high school	3.380** (1.503)	3.425** (1.486)	3.454** (1.503)
Marital Status (Single)	Divorced	4.236*** (1.413)	4.123*** (1.418)	4.244*** (1.411)
	Widowed	2.535*** (0.950)	2.602*** (0.954)	2.539*** (0.949)
	Married	2.838*** (0.569)	2.874*** (0.572)	2.831*** (0.569)
Personal Monthly Income (Up to R999)	R1000-5999	-1.228* (0.706)	-1.251* (0.702)	-1.243* (0.706)
	R6000-9999	2.177* (1.122)	2.119* (1.114)	2.182* (1.122)
	R10000-24999	2.077 (1.365)	2.197 (1.364)	2.04 (1.363)
	R25000+	5.294** (2.424)	5.696** (2.454)	5.256** (2.425)
Geo-Area (Urban)	Rural	0.442 (0.440)	0.484 (0.448)	
Constant		52.56*** (1.924)	51.85*** (1.830)	52.85*** (1.900)
Observations		15,692	15,692	15,692
R-squared		0.164	0.157	0.164

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Table reports OLS estimates of financial literacy based on the theoretical model specification. Base category in bold parentheses. Model 1 includes all variables, Model 2 excludes the Provinces and Model 3 excludes the rural dummy while retaining the provinces. Pairwise correlation test between income/education and education/occupation detected no collinearity. Appendix A6 shows the full set of results

Table 5 reports the variation in financial literacy accounted for by the two sub-groups of variables. Demographic variables accounts for 10% of the variation, while the inclusion of province contributes only 0.7% additional predictive power. The implication of these results is that the significance of the provincial variable, at least for three of the nine provinces, is likely to be driven by the demographic and socio-economic differences between the provinces. Thus, any attempt to address the provincial financial literacy gap would only be effective if it is complemented by initiatives that address the demographic differences across provinces.

Table 5: Demographic versus Geographic Variation in Financial Literacy

Model	Variables	R² Change	F Change	p
01:	Demographic	0.103	60.878	0.0000
02:	Provinces	0.007	16.244	0.0000

Note: Demographic variables include education, gender, income, marital status and race

What is evident in this study is that there are significant differences in the financial literacy levels of South Africans between and within demographic and social economic categories. The patterns observed also resonate with global findings both in the developed and in the developing economies. This provides comfort that the measure we have constructed captures the duality of the country.

5 Conclusion

We provide a benchmark profile of financial literacy in South Africa following financial sector transformation in the country, and the increasing innovation in the financial sector. In the absence of a standard definition and measure of financial literacy, we use observational data and a quantitative approach to construct a financial literacy measure in form of a financial literacy index. The variables used in the construction of the financial literacy measure are in line with the microeconomic framework of a financial behaviour and the consumption-saving decision making process of an individual. Our approach differs from earlier approaches like the ‘Big Three’ and the subsequent ‘Big Five’ used in earlier studies which focus on knowledge of interest rates, inflation and risk diversification as being synonymous to financial literacy. We also differ from studies that use the outcome-based approach used in studies conducted especially in developing countries, where the possession of a formal financial product is considered to be a measure of financial proficiency. We argue that such an outcome-based approach might instead capture the extent of financial access, which in the South African context is plausible given the financial sector transformation process of the early 2000.

The results presented here reveal a national average financial literacy score of 48.4, and dramatic differences in financial literacy by key characteristics, using pooled data for the period 2005-2009. Below average financial literacy is common among women, young adults (including students), and individuals with less than matric (high) education, Blacks, the unemployed, and rural dwellers. While urban dwellers exhibit above average financial literacy, this variable is not statistically significant for the case of South Africa. Similarly, even though there is evidence of an inverted U-shape in the association between age and financial literacy, age is not a statistically

significant correlate either. Education, income, geographical location, marital status and race, are the significant contributors to the financial literacy of South Africans. However, the significance of geographical location is outweighed by the demographic characteristics. This implies that provincial variation in financial literacy can change in line changes in these characteristics, resulting from say provincial migrations and changes in economic activities.

In examining what drives the financial literacy levels observed in this study, we find that the scores are higher in the financial knowledge domain compared to the financial capability domain. In other words, financial concepts or terms are well engrained in the minds of South Africans, but a positive financial behaviour is lacking. According to the capability theory by Nussbaum and Sen (1993) and Hilgert, et al. (2003), this behaviour can be attributed to a potentially unsupportive external economic environment within which the individual has to convert knowledge into practice. In a South African environment, an example might be the lack of transparency of financial institutions in terms of bank fees and charges, which deters potential users of financial products. Additionally the existence of credit facilities can have the unintended consequence of not saving regularly. Another possible explanation, borrowed from behavioural economics, pertains to psychological biases that underlie differences in financial capabilities over and above financial knowledge. De Meza, et al. (2008) identify procrastination, aversion to loss and regret, status quo bias, and mental accounting as some of the biases. However, we could not identify any of these behavioural variables in our data and many of them might be caused by socio-economic circumstances. For example risk aversion might be induced by poverty. Thus, notwithstanding these biases, these results provide a baseline for financial education programs. Indeed, positive behavioural aspects can be weaved into such programs.

The novelty of these results lies in appropriately defining financial literacy within the context of South Africa and the use of existing surveys to construct a country-specific measure. Given the prohibitive cost of financial literacy tailored surveys and experiments, this study provides an alternative and cost-effective approach for countries where such surveys exist. Furthermore, as most studies tend to be focussed on a particular financial product (for instance credit, investment or insurance), our approach provides a generic measure that can be tested across financial product categories. This is not far-fetched considering that cross-product holding is common practice for consumers of financial products and services.

References

- Alessie, R., van Rooij, M. and Lusardi, A., 2011: "Financial Literacy, Retirement Preparation and Pension Expectations in the Netherlands". *CeRP Working Papers, Centre for Research on Pensions and Welfare Policies*, Turin (Italy), March
- Atkinson, A., McKay, S., Collard, S. and Kempson, E., 2007: "Levels of Financial Capability in the UK", *Public Money and Management* 27(1)
- Beal, D. and Delpachitra, S., 2003: "Financial Literacy among Australian University Students", *Economic Papers* 22 (1)
- Behrman, J. R., Mitchell, O. S., Soo, C. and Bravo, D., 2010: "Financial Literacy, Schooling, and Wealth Accumulation", National Bureau of Economic Research
- Bucher-Koenen T. and Lusardi, A., 2011: "Financial Literacy and Retirement Planning in Germany", *CeRP Working Papers, Centre for Research on Pensions and Welfare Policies, Turin (Italy)*
- Bumcrot C. B., Lin, J. and Lusardi, A., 2011: "The Geography of Financial Literacy", Working Paper, RAND Corporation Publications Department
- Chen H. and Volpe, R. P., 2002: "Gender Differences in Personal Financial Literacy among College Students", *Financial Services Review Vol.11, No.4*
- Cohen, M. and Young, P., 2007: "Using Micro insurance and Financial Education to Protect and Accumulate Assets", In *Reducing Global Poverty: The Case for Asset Accumulation*, 305. The Brookings Institution
- Cole, S., Sampson, T. and Zia, B., 2011: "Prices or Knowledge: What Drives Demand for Financial Services in Emerging Markets?" *Journal of Finance*, Vol. LXVI, No.6, pp.1933-1967
- Crossan, D., Feslier, D. and Hurnard, R., 2011: "Financial Literacy and Retirement Planning in New Zealand", *CeRP Working Papers. Centre for Research on Pensions and Welfare Policies, Turin (Italy)*, January
- De Meza, D., Irlenbusch, B. and Reyniers, D., 2008: "Financial Capability: A Behavioural Economics Perspective", London: Financial Services Authority
- Dragan, B., 2011: "Financial literacy in Bosnia and Herzegovina: Analytical Report", World Bank FinScope Financial Access Surveys: www.finscope.co.za
- Fornero, E. and Monticone, C., 2011: "Financial Literacy and Pension Plan Participation in Italy", *Journal of Pension Economics and Finance*, 10(4): 547-564
- Friedman, M., 1957: "The permanent Income Hypothesis", In *A Theory of the Consumption Function*, pp. 20-37, Princeton University Press.
- Garcia, M. J. R., 2013: "Financial Education and Behavioural Finance: New Insights into the Role of Information in Financial Decisions", *Journal of Economic Surveys*, 27: 297-315
- Gine, X., Menand, L., Townsend, R. and Vickery, J., 2010: "Micro insurance: A Case Study of the Indian Rainfall Index Insurance Market", *World Bank Policy Research Working Paper Series*, The World Bank, October
- Gorbachev, O. and Luengo-Prado, M. J., 2016: "The Credit Card Puzzle: The Role of Preferences, Credit Risk and Financial Literacy", ResearchGate, <https://www.researchgate.net/publications/301688218>
- Hilgert, M. A., Hogarth, J. M. and Beverly, S. G., 2003: "Household Financial Management: The Connection Between Knowledge and Behaviour", *Federal Reserve Bulletin*, 89(7):309-322
- Hsu, J., 2011: "Aging and Strategic Learning: The Impact of Spousal Incentives on Financial Literacy", *Networks Financial Institute, Working Paper 2011-WP-06*, Indiana State University
- Hung, A. A., Parker, A. M. and Yoong, J. K. 2009: "Defining and Measuring Financial Literacy", *RAND, Working Paper WR-708*
- Huston, S. J., 2010: "Measuring Financial Literacy", *Journal of Consumer Affairs*, Vol.44, No.2, pp. 296-316.
- Jappelli, T. and Padula, M., 2011: "Investment in Financial Literacy and Savings Decisions", *Centre for Studies in Economics and Finance, Working Paper No. 272*
- Johnson, E. and Sherraden, M. S., 2006: "From Financial Literacy to Financial Capability among Youth", *Journal of Sociology and Social Welfare, September 2007*, XXXIV(3)
- Kempson, E. C. S. and Moore, N., 2005: "Measuring Financial Capabilities: An Exploratory Study", *Financial Services Authority, Consumer Research Report 37*
- Klapper, L. and Panos, G., 2011: "Financial Literacy and Retirement Planning: The Russian Case", *Journal of Pension Economics and Finance*, 10(4): 599-618
- Lusardi, A. and Mitchell, O. S., 2007a: "Baby Boomers' Retirement Security: The Role of Planning, Financial Literacy and Housing Wealth", *Journal of Monetary Economics*, 54: 205-224
- Lusardi, A. and Mitchell, O. S., 2007b: "Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education", *Business Economics*, 42, 35-44; doi:10.2145/20070104
- Lusardi, A. and Mitchell, O. S., 2011a: "The Outlook for Financial Literacy", In *Financial Literacy: Implications for*

- Retirement Security and the Financial Marketplace, Eds. Olivia S Mitchell and Annamaria Lusardi, Oxford, Oxford University Press
- Lusardi, A. and Mitchell, O. S., 2011b: "Financial Literacy around the World: An Overview", *CeRP Working Papers, Centre for Research on Pensions and Welfare Policies*, Turin (Italy), March
- Lusardi, A. and Mitchell, O. S., 2014: "The Economic Importance of Financial Literacy: Theory and Evidence", *Journal of Economic Literature*, 52(1): 5-44
- Lusardi A., Mitchell, O. S. and Curto, V., 2009: "Financial Literacy among the Young: Evidence and Implications for Consumer Policy" *National Bureau of Economic Research*, Working Paper No. 15352
- Mandell, L., 1997: "Our Vulnerable Youth: The Financial Literacy of American 12th Graders", Jump\$Start Coalition for Personal Financial Literacy
- Markow, D. and Bagnaschi, K., 2005: "What American Teens Know About Economics", *National Council on Economic Education Report*
- Modigliani, F. and Brumberg, R., 1954: "Utility Analysis and the Consumption Function: An Interpretation of Cross-section Data", *Franco Modigliani*, 1.
- Muradoglu, G. and Harvey, N., 2012: "Behavioural finance: The Role of Psychological Factors in Financial Decisions", *Review of Behavioural Finance*, 4(2): 68 – 80
- National Credit Regulator (NCR), 2012: Consumer Credit Market Report
- Nussbaum, M. C. and Sen, A. K. (Eds) (1993), *the Quality of Life*, Oxford: Clarendon Press
- OECD - Organisation for Economic Co-operation and Development, 2009: "Framework for the Development of Financial Literacy Baseline Surveys: A First International Comparative Analysis", *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 1, OECD Publishing
- Raudenbush, S.W., and Bryk, A.S., 2002: *Hierarchical Linear Models: Applications and Data Analysis Methods* (Second Edition). Thousand Oaks, CA: Sage Publications
- Tran, Nhu-An, and Tan See Yun, 2004: "TYM's Mutual Assistance Fund: Vietnam. Good and Bad Practices in Micro Insurance Case Studies", CGAP Working Group on Micro insurance, June
- Vyas, S. and Kumaranayake, L., 2006: "Constructing Socio-Economic Status Indices: How to Use Principal Components Analysis." *Health Policy and Planning* 21(6):459-468
- Woolard, I. and Leibbrandt, M., 2009: "Measuring Poverty in South Africa", *Development Policy Research Unit*, University of Cape Town
- Xu, L. and Zia, B., 2012: "Financial Literacy around the World: An Overview of the Evidence with Practical Suggestions for the Way Forward", *The World Bank*, Development Research Group, Finance and Private Sector Development Team, June 2012, Policy Research Working Paper 6107

Appendix

Appendix A1: Conceptual definitions of financial literacy

Source	Conceptual definition
Hilgert, Hogarth, & Beverley (2003)	Financial <i>knowledge</i>
FINRA (2003)	"The <i>understanding</i> ordinary investors have of market principles, instruments, organizations and regulations" (p. 2)
Moore (2003)	"Individuals are considered financially literate if they are competent and can demonstrate they <i>have used knowledge</i> they have learned. Financial literacy cannot be measured directly so proxies must be used. Literacy is obtained through practical <i>experience</i> and active <i>integration of knowledge</i> . As people become more literate they become increasingly more financially sophisticated and it is conjectured that this may also mean that an individual may be more competent" (p.29).
National Council on Economic Education (NCEE) (2005)	" <i>Familiarity</i> with basic economic principles, knowledge about the U.S. economy, and <i>understanding</i> of some key economic terms" (p. 3).
Mandell (2007)	"The <i>ability</i> to evaluate the new and complex financial instruments and <i>make informed judgments</i> in both choice of instruments and extent of use that would be in their own best long-run interests" (pp. 163-164).
Lusardi and Mitchell (2007c)	[<i>Familiarity</i>] with "the most basic economic concepts needed to make sensible saving and investment decisions" (p. 36).
Lusardi and Tufano (2008)	Focus on debt literacy, a component of financial literacy, defining it as "the <i>ability to make simple decisions</i> regarding debt contracts, in particular how one <i>applies basic knowledge</i> about interest compounding, measured in the context of everyday financial choices" (p. 1).
ANZ Bank (2008), drawn from Schagen (2007)	"The <i>ability to make informed judgements</i> and to take effective decisions regarding the use and management of money" (p. 1).
Lusardi (2008a, 2008b)	" <i>Knowledge</i> of basic financial concepts, such as the working of interest compounding, the difference between nominal and real values, and the basics of risk diversification" (p. 2).
Jump\$tart Coalition: http://www.jumpstart.org/guide.html	The ability to use knowledge and skills to manage one's financial resources effectively for a lifetime of financial well-being
OECD (2005) (<i>Financial Education</i>)	"The process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being" (p. 26).

Source: Hung et al. (2011) and Author's Compilations

Appendix A2: Average Scores in the Financial Knowledge Domain (Pooled Data)

Variable		Mean	Std. Dev.	Valid N
Sample		5.14	2.07	18717
Gender	Male	5.22	2.07	9319
	Female	5.07	2.06	9398
Race	Black	4.74	1.94	10333
	Coloured	5.68	1.86	3507
	Indian	6.38	1.91	1397
	White	7.09	1.74	3457
Education	No formal education	4.56	1.73	558
	Some primary education	4.36	2.03	1145
	Primary school completed	4.62	1.86	1370
	Some high	4.80	1.99	7099
	Matriculated	5.41	2.04	5545
	Some university	6.02	1.95	653
	University completed	6.78	1.77	1192
	Any other post-matric qualification	6.42	1.93	1155
Age Category	18-29 years	4.81	2.01	5851
	30-44 years	5.22	2.06	6490
	45-59 years	5.52	2.02	3970
	60+ years	5.49	2.15	2352
Province	Eastern Cape	5.06	1.96	2274
	Free State	4.83	2.08	1724
	Gauteng	5.57	2.02	3042
	KwaZulu Natal	5.10	2.04	2815
	Mpumalanga	4.49	2.10	1611
	Northern Province/Limpopo	4.48	2.05	1581
	Northern Cape	5.24	1.96	1476
	North West	4.77	1.93	1740
	Western Cape	5.89	2.03	2454
Area	Rural	4.78	2.00	6346
	Urban	5.41	2.07	12371
Marital Status	Single	4.80	2.00	8177
	Divorced	5.84	1.97	568
	Widowed	5.24	2.06	1493
	Married/living with partner	5.56	2.08	8479
Source of Money	Formal	5.91	1.98	5374
	Informal	4.80	2.03	5839
	Grant	4.71	2.00	2658
	Other	6.12	2.21	1200
	None	4.41	2.05	1799
Personal Income	Up to R99	4.72	1.91	8407
	1000-5999	5.18	2.03	5509
	6000-9999	6.56	1.76	1014
	10000-249	7.23	1.59	730
	R25000+	7.53	1.65	81
Occupation	Pensioner	5.46	2.12	2469
	Formal Employee	5.78	1.96	5946
	Housewife	5.50	2.16	945
	Student	4.68	1.98	1252
	Informally Employed	4.76	1.97	1546
	Self Employed	5.33	1.82	2094
	Unemployed	4.48	2.04	4287
Bank Status	Currently Banked	5.60	2.03	12226
	Previously Banked	4.92	1.84	1728
	Not Banked	4.35	1.95	4763

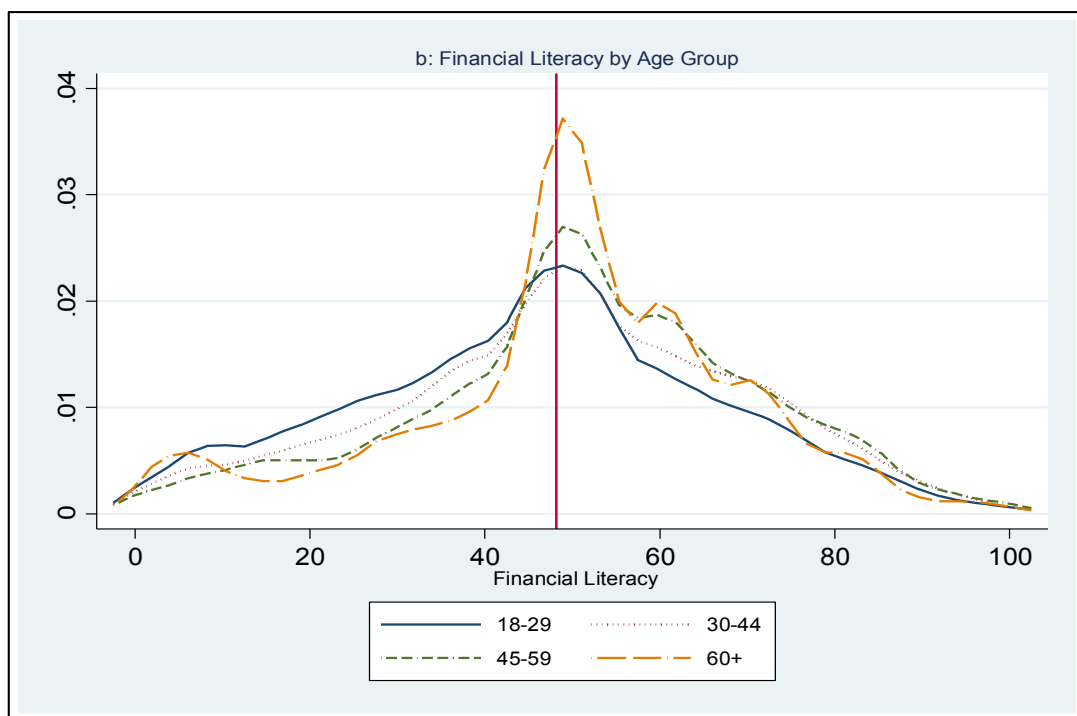
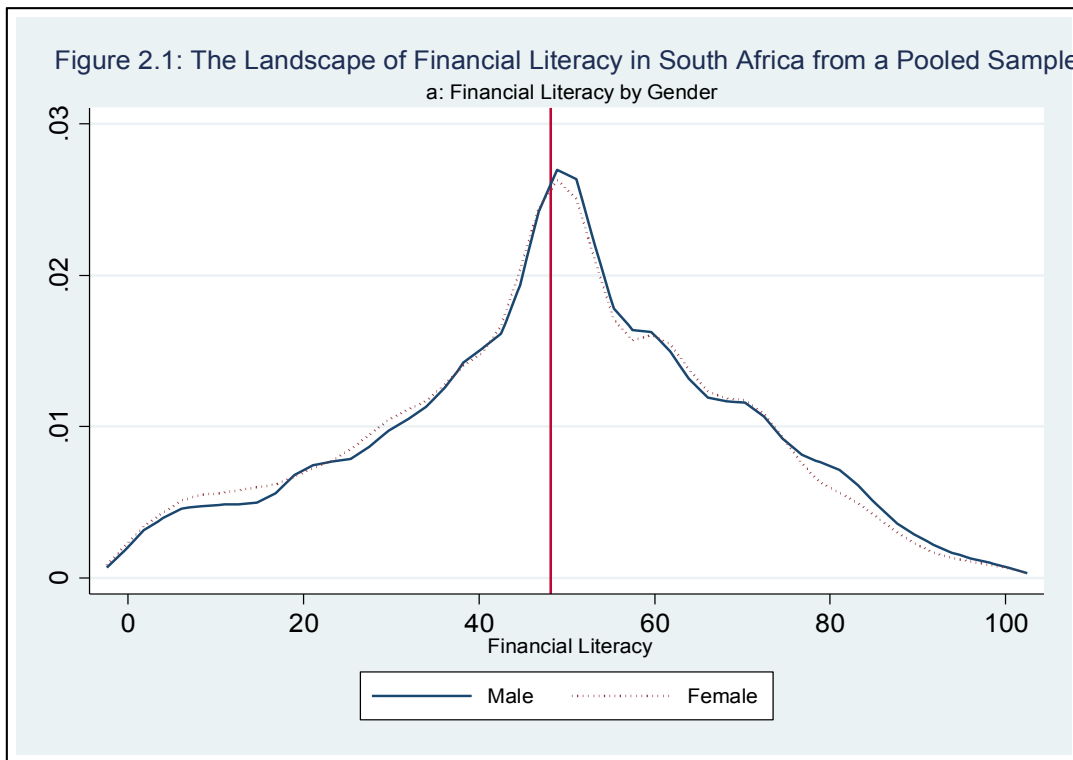
Note: The table shows the average number of questions answered in the affirmative in the financial knowledge domain, decomposed by the socio-economic and demographic characteristics of the respondents, using the pooled dataset. The data is weighted and thus the responses are nationally representative

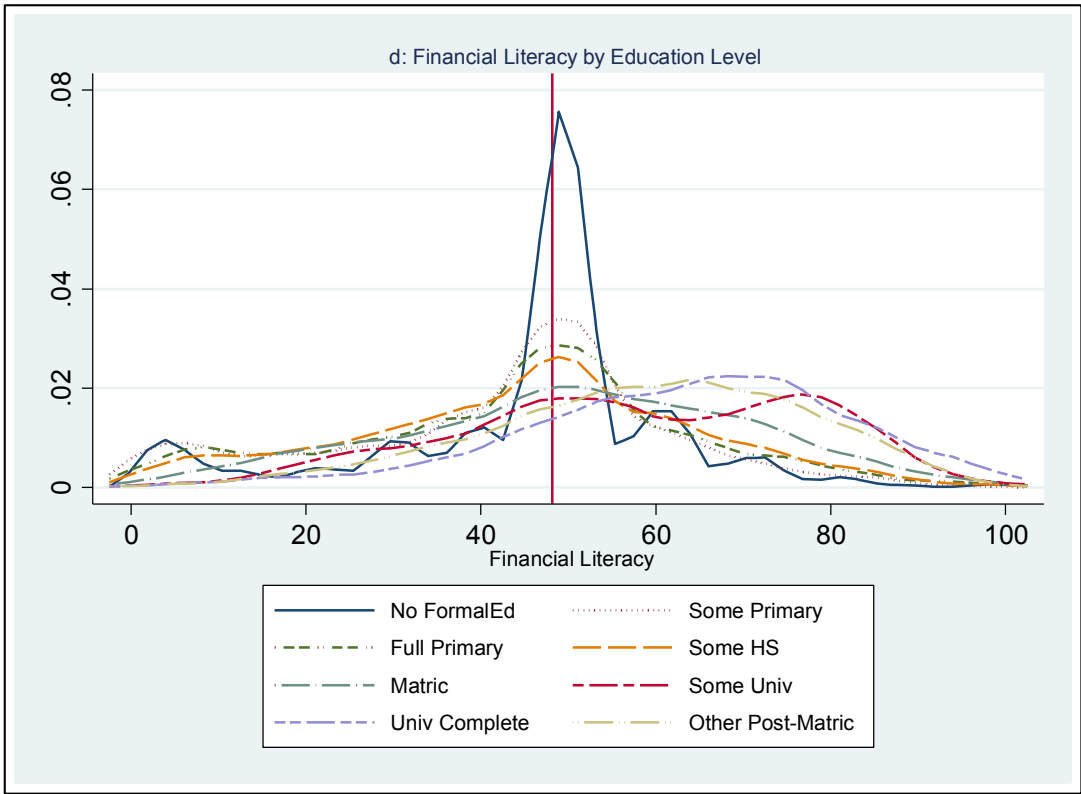
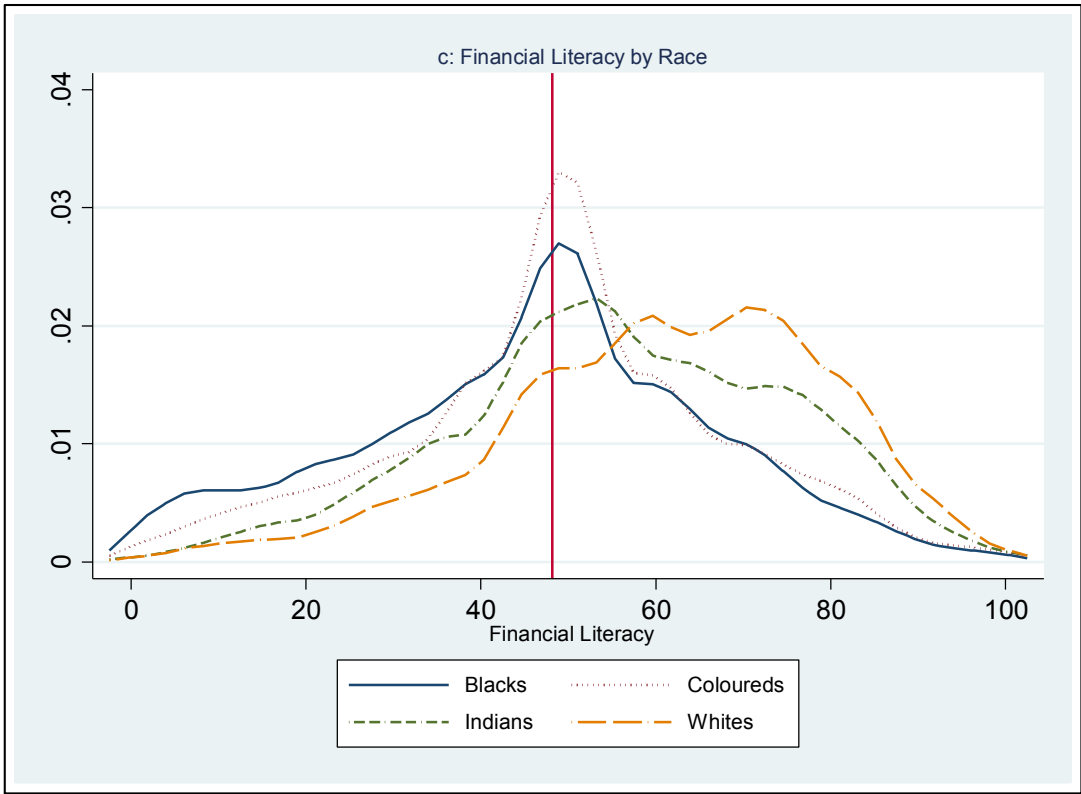
Appendix A3: Average Scores in the Financial Capability Domain (Pooled Data)

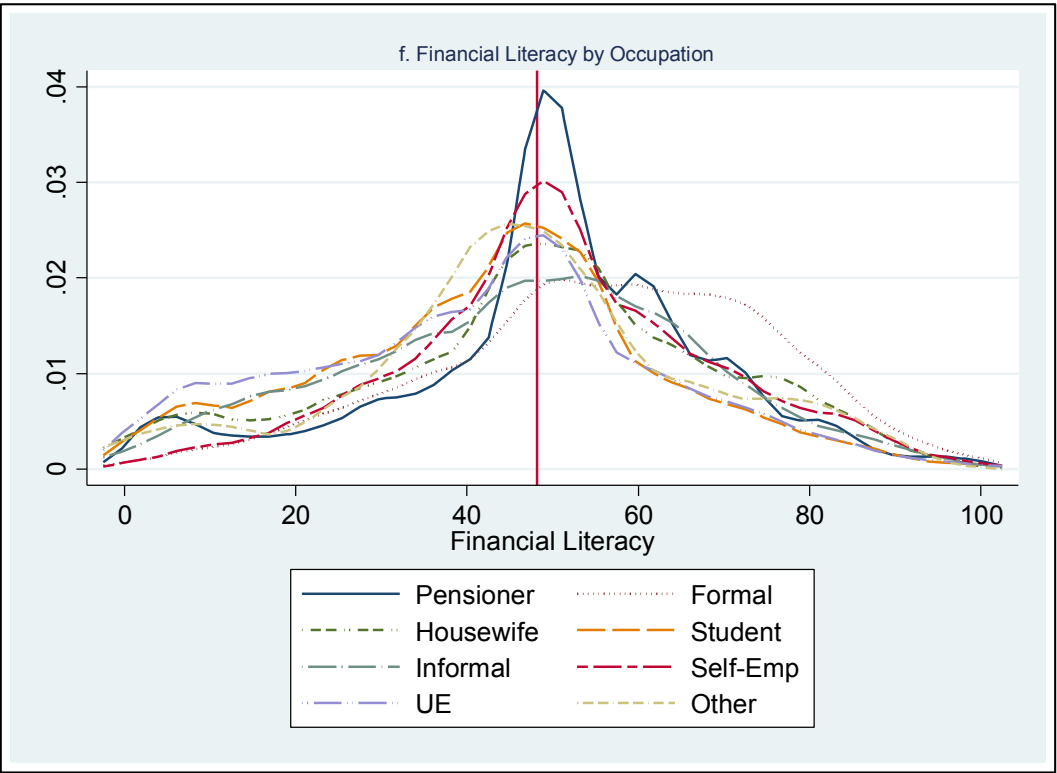
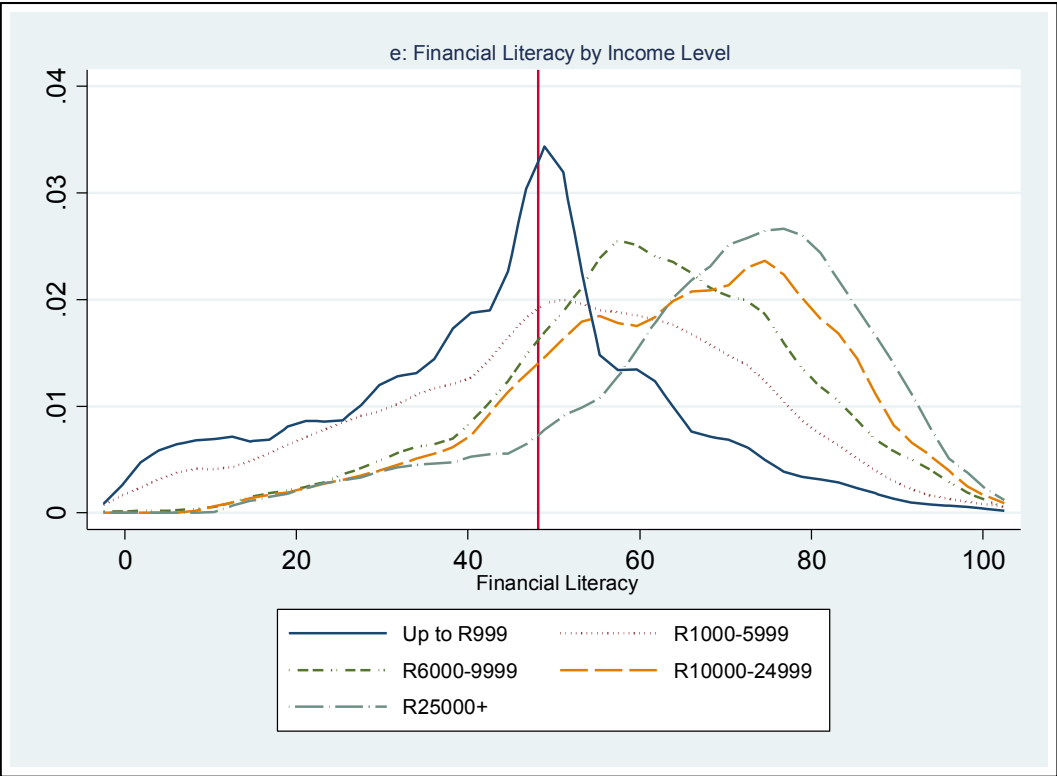
Variable	Mean	Valid N
Sample	3.05	18717
Gender		
Male	3.09	9319
Female	3.01	9398
Population Group		
Black	2.95	10333
Colored	2.97	3507
Indian	3.64	1397
White	3.65	3457
Education		
No formal education	2.46	558
Some primary education	2.61	1145
Primary school completed	2.62	1370
Some high education	2.85	7099
Matriculated	3.27	5545
Some university	3.87	653
University completed	4.02	1192
Any other post-metric qualification	3.64	1155
Age Category		
18-29 years	2.99	5851
30-44 years	3.11	6490
45-59 years	3.12	3970
60+ years	3.00	2352
Province		
Eastern Cape	2.53	2274
Free State	3.08	1724
Gauteng	3.37	3042
KwaZulu Natal	3.03	2815
Mpumalanga	3.18	1611
Limpopo	2.96	1581
Northern Cape	2.96	1476
North West	2.92	1740
Western Cape	3.22	2454
Area		
Rural	2.89	6346
Urban	3.18	12371
Marital Status		
Single	2.94	8177
Divorced	3.03	568
Widowed	2.87	1493
Married/living with partner	3.25	8479
Sources of Money		
Formal	3.60	5374
Informal	2.99	5839
Grant	2.75	2658
None	2.47	1799
Personal monthly Income		
Up to R999	2.64	8407
R1000-5999	3.43	5509
R6000-9999	3.84	1014
R10000-24999	3.77	730
R25000+	4.32	81
Occupation		
Pensioner	2.97	2469
Formal Employed	3.58	5946
Housewife	2.93	945
Student	2.90	1252
Informally Employed	3.02	1546
Self Employed	2.97	2094
Unemployed	2.67	4287
Banking History		
Currently	3.49	12226
Previously banked	2.53	1728
Not banked	2.42	4763

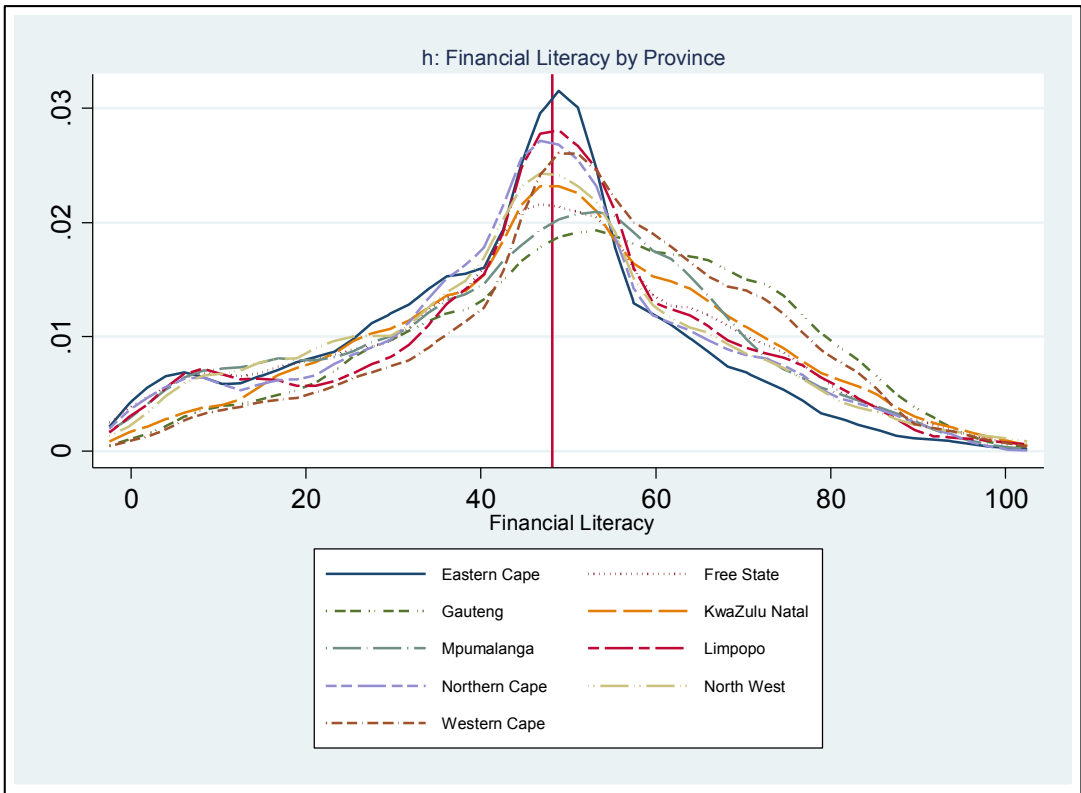
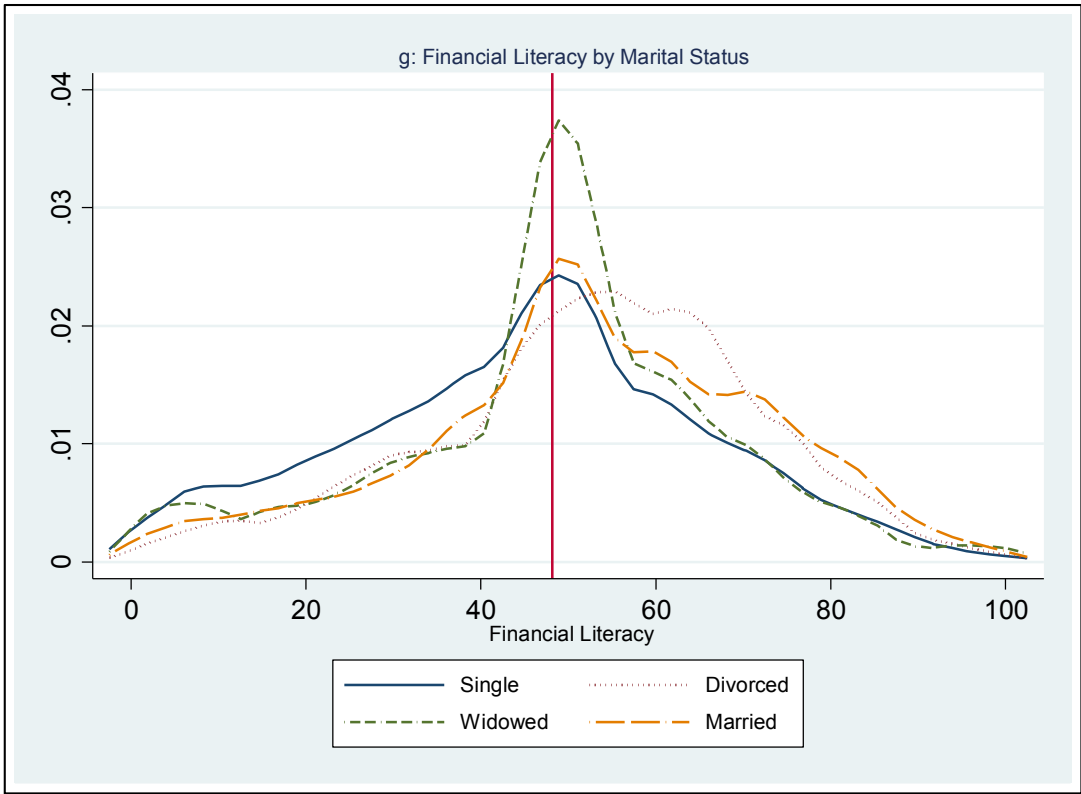
Note: The table shows pooled weighted responses by respondents to the questions in the capability domain. The weights used are in line with those used by statistics South Africa for the period under review and, as such, they results are nationally representative

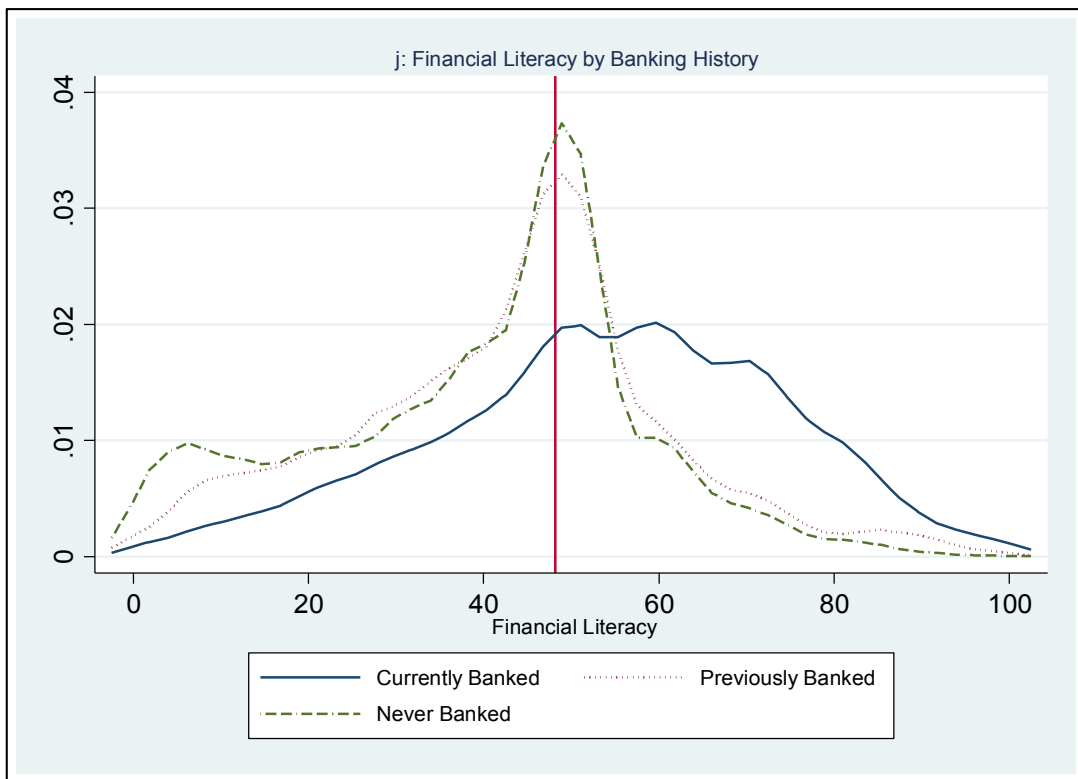
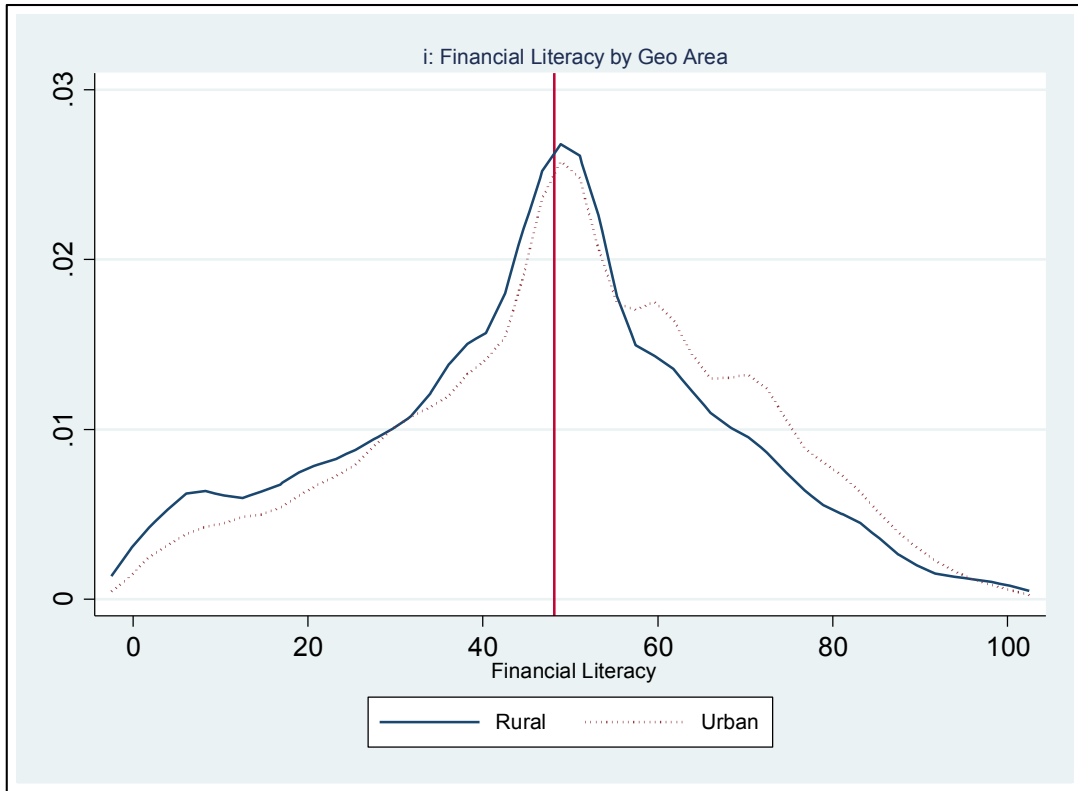
Appendix A4: The Distribution of Financial Literacy in South Africa by categories (Pooled Sample)











Notes: Figures 2.1a-j show the distribution of financial literacy scores by the individual's characteristics. The data is weighted to be nationally representative. The vertical line shows the national average of 48.4 out of 100.

Appendix A5: Decomposition of Average Scores of Financial Literacy

Variable	Mean	Valid N
SA Average	48.42	18717
Gender		
Male	49.02	9319
Female	47.87	9398
Population group		
Black	46.19	10333
Coloured	49.19	3507
Indian	55.83	1397
White	60.86	3457
Education		
No formal education	45.71	558
Some primary	42.40	1145
Primary school	44.33	1370
Some high school	45.20	7099
Matriculated	50.47	5545
Some university	57.46	653
Any other post-matric qualification	58.73	1155
University	63.02	1192
Age Category		
18-29 years	45.79	5851
30-44 years	49.45	6490
45-59 years	51.39	3970
60+ years	50.02	2352
Province		
Eastern Cape	43.12	2274
Northern Cape	45.58	1476
North West	45.63	1740
Free State	46.19	1724
Mpumalanga	46.21	1611
Limpopo	46.86	1581
KwaZulu Natal	48.93	2815
Gauteng	52.45	3042
Western Cape	52.46	2454
Area		
Rural	46.24	6346
Urban	50.07	12371
Marital Status		
Single	45.36	8166
Divorced	52.69	568
Widowed	48.62	1493
Married	52.45	8467
Source of Money		
Formal	56.34	5374
Informal	45.65	5839
Grant	45.03	2658
Personal Monthly income		
Up to R999	43.64	8407
R1000-5999	51.11	5509
R6000-9999	60.61	1014
R10000-24999	64.02	730
R25000+	68.40	81
Occupation		
Unemployed	41.74	4287
Student	43.29	1252
Informally Employed	46.66	1546
Housewife	48.32	945
Pensioner	49.72	2469
Self Employed	50.57	2094
Formal Employee	55.73	5946
Banking History		
Currently	54.06	12211
Previously Banked	42.99	1723
Never banked	39.70	4760

Notes: The table shows the decomposition of the average financial literacy score by socio-demographic characteristics of South Africans. The data is weighted to be nationally representative. Weights are benchmarked to Statistics South Africa.

Appendix A6: Multivariate Correlates of Financial Literacy in South Africa

Variable	(1)	(2)	(3)	(4)
Gender (Male)	Female -0.123 (0.444)	-0.0469 (0.445)	-0.116 (0.444)	-0.103 (0.440)
Race (Blacks)	Coloured 0.873 (0.607)	0.719 (0.545)	0.903 (0.605)	0.906 (0.604)
	Asian/Indian 2.653*** (0.899)	4.057*** (0.827)	2.764*** (0.898)	2.789*** (0.890)
	White 4.467*** (0.903)	4.525*** (0.906)	4.517*** (0.903)	4.488*** (0.874)
Education (No Education)	Some Primary School -3.855*** (1.244)	-3.857*** (1.232)	-3.803*** (1.244)	-3.690*** (1.245)
	Primary school -2.748** (1.212)	-2.872** (1.206)	-2.696** (1.211)	-2.371** (1.209)
	Some high school -2.090* (1.094)	-2.094* (1.082)	-2.031* (1.093)	-1.900* (1.090)
	Matriculated -1.205 (1.202)	-1.077 (1.188)	-1.139 (1.200)	-0.936 (1.195)
	Some university 3.739** (1.687)	3.476** (1.681)	3.822** (1.684)	4.192** (1.690)
	University completed 4.810*** (1.534)	5.032*** (1.526)	4.914*** (1.530)	5.081*** (1.530)
	Other post matric 3.380** (1.503)	3.425** (1.486)	3.454** (1.503)	3.926*** (1.498)
Province (Western Cape)	Eastern Cape -4.045*** (0.761)		-4.162*** (0.764)	-4.177*** (0.762)
	Northern Cape -2.706*** (0.810)		-2.722*** (0.809)	-2.736*** (0.813)
	Free State -0.227 (0.858)		-0.240 (0.857)	-0.245 (0.861)
	KwaZulu Natal 1.229 (0.786)		1.142 (0.789)	1.094 (0.790)
	North West -1.460* (0.880)		-1.566* (0.879)	-1.508* (0.882)
	Gauteng -0.590 (0.743)		-0.566 (0.743)	-0.558 (0.743)
	Mpumalanga -1.587* (0.923)		-1.670* (0.922)	-1.736* (0.928)
	Limpopo 1.105 (0.916)		0.919 (0.913)	0.874 (0.914)
Marital Status (Single)	Divorced 4.236*** (1.413)	4.123*** (1.418)	4.244*** (1.411)	4.514*** (1.409)
	Widowed 2.535*** (0.950)	2.602*** (0.954)	2.539*** (0.949)	2.835*** (0.951)
	Married/Living with partner 2.838*** (0.569)	2.874*** (0.572)	2.831*** (0.569)	2.979*** (0.568)
Age Category (18-29 years)	30-44 years 0.0692 (0.605)	-0.255 (0.610)	0.0653 (0.605)	0.0362 (0.604)
	45-59 years 0.744 (0.772)	0.373 (0.775)	0.746 (0.772)	0.824 (0.771)
	60+ years 0.202 (1.296)	0.0105 (1.289)	0.214 (1.297)	0.0588 (1.295)
Personal Monthly Income (Up to R999)	R1000-5999 -1.228* (0.706)	-1.251* (0.702)	-1.243* (0.706)	-1.434** (0.687)
	R6000-9999 2.177* (1.122)	2.119* (1.114)	2.182* (1.122)	2.137* (1.101)

Appendix A6: Correlates of Financial Literacy in South Africa.....continued

Variable		(1)	(2)	(3)	(4)
Personal Income	R10000-24999	2.077 (1.365)	2.197 (1.364)	2.040 (1.363)	2.040 (1.358)
	R25000+	5.294** (2.424)	5.696** (2.454)	5.256** (2.425)	5.322** (2.448)
Source of Money (Formal)	Informal	-1.709** (0.780)	-1.607** (0.784)	-1.746** (0.777)	
	Grant	-0.814 (1.044)	-0.974 (1.045)	-0.867 (1.040)	
	Other	-2.072* (1.250)	-1.923 (1.258)	-2.125* (1.246)	
Occupation (Pensioner)	Formal employee	1.745 (1.291)	1.882 (1.291)	1.755 (1.291)	2.275** (1.157)
	Housewife	-1.725 (1.435)	-1.712 (1.442)	-1.699 (1.434)	-2.242 (1.401)
	Student	-1.624 (1.397)	-1.637 (1.396)	-1.600 (1.397)	-2.339* (1.318)
	Informal employee	-1.367 (1.347)	-1.318 (1.348)	-1.379 (1.348)	-1.897 (1.259)
	Self employed	2.050* (1.208)	2.150* (1.205)	2.073* (1.208)	2.746** (1.148)
	Unemployed	-2.860** (1.155)	-2.810** (1.157)	-2.852** (1.154)	-3.899*** (1.105)
	Banking History (Currently Banked)	Previously Banked	-7.389*** (0.747)	-7.178*** (0.757)	-7.409*** (0.747)
	Never Banked	-9.490*** (0.607)	-9.429*** (0.606)	-9.516*** (0.607)	-9.436*** (0.601)
Constant		52.56*** (1.924)	51.85*** (1.830)	52.85*** (1.900)	52.22*** (1.710)
Mean VIF		2.75	2.75	2.75	2.75
Observations		15,692	15,692	15,692	15,692
R-squared		0.164	0.157	0.164	0.157

Robust standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Note: Table reports OLS estimates of financial literacy based on the theoretical model specification. Base category in bold parentheses. Pairwise correlation test between income/education and education/occupation detected no collinearity

southern africa labour and development research unit

The Southern Africa Labour and Development Research Unit (SALDRU) conducts research directed at improving the well-being of South Africa's poor. It was established in 1975. Over the next two decades the unit's research played a central role in documenting the human costs of apartheid. Key projects from this period included the Farm Labour Conference (1976), the Economics of Health Care Conference (1978), and the Second Carnegie Enquiry into Poverty and Development in South Africa (1983-86). At the urging of the African National Congress, from 1992-1994 SALDRU and the World Bank coordinated the Project for Statistics on Living Standards and Development (PSLSD). This project provide baseline data for the implementation of post-apartheid socio-economic policies through South Africa's first non-racial national sample survey.

In the post-apartheid period, SALDRU has continued to gather data and conduct research directed at informing and assessing anti-poverty policy. In line with its historical contribution, SALDRU's researchers continue to conduct research detailing changing patterns of well-being in South Africa and assessing the impact of government policy on the poor. Current research work falls into the following research themes: post-apartheid poverty; employment and migration dynamics; family support structures in an era of rapid social change; public works and public infrastructure programmes, financial strategies of the poor; common property resources and the poor. Key survey projects include the Langeberg Integrated Family Survey (1999), the Khayelitsha/Mitchell's Plain Survey (2000), the ongoing Cape Area Panel Study (2001-) and the Financial Diaries Project.



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