




Financial literacy among small and medium enterprises in Zimbabwe



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Background: Global concerns about financial literacy have heightened following the 2007–2008 global financial crisis during which it became apparent that lack of financial literacy was one of the factors that contributed to detrimental financial decision making. This recognition shows that poor financial decisions have a harmful overspill impact on financial and economic stability in a country. Complex financial markets call for exceptional levels of financial competence to enable individuals and business people to make intelligent choices among competing financial products. The study was conducted in two provinces of Zimbabwe, namely, Harare and Mashonaland Central Province among small and medium enterprises (SMEs) who were in operation.

Aim: The study sought to ascertain the level of financial literacy among SMEs business owners and to identify factors that influence the financial literacy levels. The research will give an insight on the state of preparedness of SMEs to participate in highly complicated financial markets. This adds to the existing scarce literature in sub-Saharan Africa on financial literacy levels among SMEs.

Setting: The study was conducted among SMEs who reside in two provinces of Zimbabwe namely Harare Province and Mashonaland Central province.

Methods: A quantitative cross-sectional research design was employed, with data collected by means of a questionnaire administered to a sample of 384 SMEs in Harare and Bindura districts.

Results: Findings revealed lower levels of financial literacy among SMEs. The main variables influencing financial literacy levels were interest rates and inflation.

Conclusion: The study concludes that financial literacy among SMEs is low, and hence there is a need to introduce financial literacy education among small business owners. It is recommended that measurement of financial literacy be extended to different population cohorts to provide baseline data on which policies can be crafted.

Keywords: Financial literacy; small and medium enterprises; interest rates; inflation; Zimbabwe.

Introduction

A favourable economic environment is crucial to the success of small and medium enterprises (SMEs) in any economy. In light of this, various governments have prioritised this sector and channelled resources for its growth and development (Fatoki 2014; Nunoo & Andoh 2012). Such initiatives are a recognition that SMEs are the major drivers of economic growth and development (Adomako, Danso & Damoah 2015; Eniola & Entebang 2017; Refera, Dhaliwal & Kaur 2016) and certainly a means to achieve the Sustainable Development Goals (SDGs). Like other governments, Zimbabwe has implemented several support strategies to ascertain the continued existence of this key economic sector. The most recent strategy is spelt out in Zimbabwean economic blueprint, the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIM-ASSET), crafted to achieve sustainable development and social equity anchored on indigenisation, empowerment and employment creation. In that plan, the SME sector is identified as one of the principal sectors in the economy that has the potential for facilitating the achievement of the 'Sustainable Socio-Economic Transformation' agenda of the government (ZIMASSET 2013).

In an endeavour to strengthen the functioning of the SME sector, financial literacy has been considered a prerequisite for the sector, as business owners make routine financial decisions daily that have a bearing on their success and growth (Arellano, Cámara & Tuesta 2018; Cucinelli,

Trivellato & Zenga 2019). Thus, in order to operate efficiently and attain the envisaged economic growth and sustainability, SMEs need to be equipped with the necessary skills to undertake effective financial decisions (Mabhanda 2015). A key economic observation has been that financial markets are now more accessible to small investors, offering a variety of financial products from which the consumer has to choose (Bongini & Zia 2018; Lusardi & Mitchell 2011; Skagerlund et al. 2018). However, the choice is not an easy one, as there are serious penalties that come with each inappropriate financial decision taken (Nunoo & Andoh 2012; Oseifuah 2010), resulting in underscoring the essentiality of financial literacy.

Financial literacy has been made a priority by several governments globally to deal with the need to increase financial knowledge and the skills necessary for entrepreneurs to navigate the financial world. In addition, financial literacy plays a pivotal role in economies achieving economic growth and development (Bongini & Zia 2018; Lusardi & Mitchell 2011; Nkomazana, Sibanda & Duve 2015; Organisation for Economic Co-operation and Development [OECD] 2013).

However, Gaurav and Singh (2012), as well as Fatoki and Oni (2014), noted that similar studies are conducted in the developed economies but are less so in emerging economies. Although the World Bank conducted studies of financial literacy within several emerging economies, the study excluded Zimbabwe (Nkomazana et al. 2015; Xu & Zia 2012); therefore, the main purpose of this research is to extend the dialogue on financial literacy by placing Zimbabwe on the map. These results form a baseline to conduct further research on financial literacy.

The problem addressed in this study is a result of observations made by various stakeholders which pointed to acute financial illiteracy among SMEs. Studies conducted in Zimbabwe showed that most SMEs (85%) are informal and are financially excluded (Maseko & Manyani 2011; World Bank 2012). In many of these enterprises, records of business transactions are non-existent (Mabhanda 2015; Mandizvidza & Mapepeteta 2017) and, where they do, these are often times incomplete. In his study, Mabhanda (2015) found lack of financial literacy among SMEs being apparent, as evidenced by the absence of proper accounting records. These behaviour patterns have made it difficult for SMEs to access funds from the established financial institutions, as they lack the ability to write convincing business proposals (Cole, Sampson & Zia 2011; Reserve Bank of Zimbabwe [RBZ] 2016), which stifles growth and often leads to business failure. Mabhanda (2015) as well as Abel (2016) suggest that the problem of financial literacy requires immediate attention if business entities are to survive; hence, the focus of this study.

Government efforts aimed at the development of the SME sector have not been as fruitful as anticipated, as the growth of the sector remains sluggish with many of them still financially excluded (World Bank 2012), and the sector still records high mortality rates during the early stages of operation. While business failure can be explained by several

economic and social factors, financial illiteracy has a fair share to the mishap, hence, the increased attention by the Central Bank towards an inclusive financial sector where financial literacy is also emphasised (RBZ 2016). SMEs' contribution to the national economy has failed to meet expectations despite the preferential treatment given to the sector and the faith that policy makers have placed in it (Nyamwanza 2014). This study therefore aims to suggest a solution to the challenge by addressing the problem through determining the level of financial literacy of small and medium size business owners. This will enable the formulation of customised policies that promote the long-term profitability and survival of these SMEs. Specifically, this research seeks to answer the following questions:

- What is the level of financial literacy of small and medium size business owners in Zimbabwe?
- What factors influence the level of financial literacy of small and medium size business owners?

Literature review

Financial literacy means different things to different people, and to this end, there is no universally agreed definition of financial literacy (Cude 2010; Huston 2010; Knoll & Houts 2012; Remund 2010; Schmeiser & Seligman 2013). However, United States Agency for International Development (USAID) (2009) define a financially literate SME owner as someone who makes sound financial decisions at various stages of the business cycle and shows an exceptional ability to secure correct financial products. The same individual is able to interact confidently with the suppliers of products and services.

Financial literacy is acknowledged globally as a critical component of human capital that influences both financial stability and economic growth (Lusardi & Mitchell 2011; OECD 2013). The research is informed by two main theories, the resource-based theory and economic theories of savings and consumption. According to the resource-based theory by Penrose (1959), later developed by Lippman and Rumelt (2003); Wernerfelt (1984); Barney (1991); Grant (1991) and Peteraf (1993), a firm's resources can be combined to create a competitive advantage (Alvarez & Busenitz 2001; Barney 1991; Ferreira, Azevedo & Ortiz 2011). This will enable a firm to identify new opportunities and new venture growth and consequently realise its full economic value (Foss 2011). Theories of savings and consumption, such as the relative income hypothesis by Duesenberry (1949), the life cycle theory of consumption and spending (Modigliani & Brumberg 1954) and the permanent income hypothesis (Friedman 1957) assume that consumers are able to vary savings and consumption during their lifetime and this requires exceptional levels of financial literacy (Lusardi & Mitchell 2011).

It has been proven that financial literacy is essential in any economy (Arrellano et al. 2018; Cucinelli et al. 2019; Mancebon et al. 2019), and there are four groups of beneficiaries for financial literacy identified as the individual (Kezar & Yang 2010; Lusardi & Mitchell 2011), the economy (Capuano & Ramsay 2011; Lusardi & Mitchell 2011; RBZ 2016; Wachira &

Kihiu 2012), the financial system (Refera et al. 2016) and finally the SME sector (Adomako et al., 2015; Bruhn & Zia 2011; Gibson, McKenzie & Zia 2014; Nunoo & Andoh 2012; Wise 2013). Financial literacy is important to the individual who makes daily decisions on budgets (Capuano & Ramsay 2011; Wachira & Kihiu 2012), savings (Cole et al. 2011) and wealth creation (Japelli & Padulo 2013; Lusardi & Mitchell 2011), among other critical decisions. Previous research studies documented that the financially literate display an outstanding ability to manage their financial resources, they are active participants in the stock market as evidenced by their accumulation of a diversified portfolio of assets (Lusardi & Mitchell 2011), and are cautious of debt (Calderon 2014; Gerardi, Goette & Meier 2013; Wachira & Kihiu 2012). To the financial sector, financial literacy also enhances efficiency through fostering market discipline (Wachira & Kihiu 2012), ensuring efficient allocation of resources (Capuano & Ramsay 2011; Wachira & Kihiu 2012) and facilitating an inclusive financial sector (Nunoo & Andoh 2012).

For the small business owner, financial literacy is not an optional skill. Entrepreneurs who are financially literate make routine decisions that direct operations of the firm (Adomako et al. 2015). Most studies have concluded on a relationship between financial literacy and financial business outcomes (Adomako & Danso 2014; Bruhn & Zia 2011; Fatoki & Oni 2014; Lusardi & Scheresberg 2013). Lusardi, Mitchell & Curto (2009) mention that SMEs that make inappropriate financial decisions have a heavy presence in the informal financial systems and make incorrect borrowing decisions, such as taking up expensive debt, hence, the increasing interest in financial literacy of SMEs (Bruhn & Zia 2011; Cumurovic & Hyll 2019; Jayachandran & Pande 2010; Mckenzie & Woodruff 2014).

Considering the importance of financial literacy to various economic sectors, it is unfortunate that research studies reveal widespread financial illiteracy across the globe (Arrellano et al. 2018; Atkinson & Messy 2011; Eniola & Entebang 2017; Lusardi & Mitchell 2011; 2014; Nunoo & Andoh 2012; Refera et al. 2016).

A correlation has been established between financial illiteracy and results of poor financial decisions (Calderon 2014; Cole et al. 2011; Lusardi & Mitchell 2014, 2016; Wachira & Kihiu 2012), and this finding has raised concerns about how to improve the situation (Calderon 2014; Eniola & Entebang 2017; Refera et al. 2016; Wachira & Kihiu 2012). Acute financial illiteracy has been noted among the old and the young (Alessie, Van Rooij & Lusardi 2011; Lusardi & Mitchell 2011; Gerardi et al., 2013; Kadoya & Khan 2019; Xu & Zia 2012), among women (Hasler & Lusardi 2017; Hung, Yoong & Brown 2012; Kadoya & Khan 2019; Lusardi & Mitchell 2011; Menkhoff et al. 2014; West & Worthington 2016; Xu & Zia 2012) and among the less educated (Agarwalla et al. 2013; Lusardi 2011; West & Worthington 2016).

The current study seeks to ascertain the level of financial literacy among small and medium size business owners in

Zimbabwe. This is because not all SME owners are financially literate as evidenced by several business failures attributed to poor financial management (Eniola & Entebang 2017). The absence of baseline data on the level of financial literacy of different population cohorts impedes the formulation and implementation of financial literacy enhancement programs (Refera et al. 2016), hence, the purpose of this study. The main objectives of the research therefore are to measure the level of financial literacy of SMEs and identify variables that explain financial literacy among this population group.

Methodology

This survey employed a quantitative approach where multi-stage cluster sampling was used to draw a sample of 400 owners of small and medium size businesses housed in Harare and Bindura districts. Multi-stage cluster sampling was deemed suitable for the study because of the absence of an existing sampling frame. Furthermore, SMEs are a large geographically dispersed population making it difficult to compile an exhaustive list of all SMEs in Zimbabwe and hence clustering significantly reduced the cost of data collection. A survey design was adopted as it enabled the gathering of a large amount of data (Saunders, Lewis & Thornhill 2007). Additionally, the target respondents are used to completing questionnaires and they could take the survey and complete it anywhere resulting in adequate data for the study (Creswell 2014).

The objectives of the study were to determine the level of financial literacy among SME business owners and to identify the factors that explain financial literacy of SME business owners, and in this regard a self-administered questionnaire containing 52 questions was used to collect data. The questionnaire was developed based on previous research studies by the OECD (2013) and Lusardi and Mitchell (2014). The OECD (2013) survey instrument was developed to measure the financial literacy of people in different countries from different backgrounds, and has been used in a pilot study in 14 countries across four continents (Atkinson & Messy 2012). For consistency and comparison, the OECD (2013) recommends the use of the instrument across nations. The questionnaire was composed of two sections, the first section contained questions that captured the socio-demographic characteristics of the respondents relating to gender, age, and family size, as well as their business characteristics, such as type of business, experience of the owner, period of operation, number of employees and sales turnover. The second section contained nine questions that measure financial literacy. The questions measure the respondents' understanding of interest rates, inflation and risk diversification, which have been identified as the 'standard' measures of financial literacy as recommended by Lusardi & Mitchell (2011) and have been used in numerous surveys across the globe. These questions were developed following intelligence gathered from savings and portfolio selection by Americans, and have been used extensively because of their simplicity, relevance, brevity and their capacity to differentiate to enable comparisons across people (Lusardi & Mitchell 2011). The section also included

questions that assessed the respondents' mathematical ability by testing arithmetic competence, such as adding, subtracting, dividing and multiplying. Numerical ability is deemed an essential component of financial literacy (Erner, Goedde-Menke & Oberste 2016; Ritsalu & Poder 2016; Sinayev & Peters 2015). Skagerlund et al. (2018) found that numeracy was the strongest predictor of financial literacy; hence, the inclusion of these questions in the research.

Reliability of the instrument was measured using internal consistency that ensures that there is regularity in the way the participants respond to the multiple items on the scale (Adams & Lawrence 2015), while validity had been tested by previous researchers who had used the instrument before, such as the OECD (2013) and Lusardi and Mitchell (2014). In addition, a pilot study was conducted and necessary amendments were made to the questionnaire before distribution to the final respondents.

Data analysis

Data were analysed using Statistical Package for Social Sciences (SPSS version 22) and presented using frequency distribution tables. A principal component analysis was employed to help single out variables that best describe financial literacy. Financial literacy levels were determined using the scoring approach, where a percentage of correct responses against the total was given. The financial literacy score was given by (Eqn 1):

$$\text{Financial knowledge score} = \frac{\text{Number of correct responses}}{\text{Total number of financial knowledge questions}} * 100$$

[Eqn 1]

Ethical considerations

This article followed all ethical standards for carrying out research without direct contact with human or animal subjects.

Findings and discussion

Table 1 shows that of the 400 questionnaires distributed, 278 usable responses were collected; thus, achieving a response rate of 70%.

Table 2 is a summary of the demographic characteristics of the respondents.

Approximately three quarters (72%) of the respondents were aged between 18 and 39, 20.8% were aged between 40 and 49, while 7.2% were aged between 50 and 69 years. Approximately

54.7% were married and 37.4% were single, while the rest were widowed, separated or divorced. Of the total respondents, 61% were male and 39% female, and 41% had been to secondary school and 4.3% had either primary education or no formal education. About half of the respondents (54.7%) were either university graduates or possessed technical or professional qualifications showing a high literacy rate among the respondents. In terms of the business sector, 32.7% of the respondents were from the

TABLE 2: Respondents' demographic characteristics.

Variable	Classification	Frequency	Percentage	
Age	18–19	7	2.5	
	20–24	71	25.5	
	25–29	38	13.7	
	30–34	36	12.9	
	35–39	48	17.3	
	40–44	34	12.2	
	45–49	24	8.6	
	50–54	15	5.4	
	55–59	4	1.4	
	60–69	1	0.4	
	Total	278	100.0	
Marital status	Married	152	54.7	
	Divorced	10	3.6	
	Widowed	7	2.5	
	Single	104	37.4	
	Separated	5	1.8	
	Total	278	100.0	
Gender	Male	165	59.4	
	Female	113	40.6	
	Total	278	100.0	
Educational level	Primary	9	3.2	
	Secondary	114	41.0	
	Technical	50	18.0	
	Professional	19	6.8	
	University level	83	29.9	
	No formal education	2	0.7	
	Other (specify)	1	0.4	
	Total	278	100.0	
	Business sector	Agriculture	35	12.6
Wholesale and retail		91	32.7	
Manufacturing		39	14.0	
Transport		15	5.4	
Construction		17	6.1	
Energy and construction		4	1.4	
Tourism		5	1.8	
Art, entertainment, culture, education and sport		26	9.4	
Other (specify)		46	16.5	
Total		278	100.0	
Age of the business		Less than 1 year	60	21.6
		1–2 years	81	29.1
		3–5 years	92	33.1
	6–10 years	35	12.6	
	More than 10 years	10	3.6	
	Total	278	100.0	
	Prior experience	Less than 1 year	101	36.3
1–2 years		65	23.4	
3–5 years		75	27.0	
6–10 years		16	5.8	
More than 10 years		7	2.5	
Total		278	100.0	

TABLE 1: Questionnaire response rate.

Questionnaires distributed	Sample size	Responses	Response rate (%)
Harare	248	200	81
Bindura	152	78	51
Total	400	278	70

wholesale and retail sector, 14% from the manufacturing sector, 12.6% from the agricultural sector, 9.4% from the art, culture, education and sport sector, construction sector had 6.1% respondents and 16.5% were from other sectors. About 83.8% had been in business for 5 years or less, while 12.6% had been in business for 6–10 years and only 3.6% had been in operation for more than 10 years. Of the total respondents, 86.7% had between 1 and 5 years of prior business experience, 5.8% had between 6 and 10 years' experience and 5% had no experience at all.

Financial literacy scores

The main objective of the research was to ascertain the level of financial literacy of SMEs in Zimbabwe, and identify the variables that explain the financial literacy levels. Findings from responses to each of the financial literacy questions are presented in Table 3.

The first question measured the respondents' knowledge of calculating compound interest, and, as shown in Table 1, 74.5% of the respondents were able to calculate compound interest rates and 25.5% were not. The second question measured an understanding of inflation in the context of financial decision making.

Findings of the research revealed that respondents were knowledgeable about inflation as indicated by 71.6% of the respondents who answered the question correctly, while 12.2% did not know. The third question tested understanding of the difference between stocks and mutual funds as well as risk diversification. Only 36% of the respondents answered correctly, showing a low level of understanding of the stock market.

Although most respondents did not know the difference between stocks and a stock mutual fund, they knew that an investment with a higher return is associated with high risk. Responses to question 4 revealed that 71.9% of the respondents answered the question correctly, while only 9.4% responded with a 'do not know' answer. Of the total respondents, 68.7% knew that they could reduce risk by diversifying their asset portfolio, while 11.5% did not know that.

Researchers maintain that numerical ability provides a base for financial literacy, as the ability to perform basic

TABLE 3: Responses to financial literacy questions.

Measurement	Correct response (%)	Incorrect response (%)	Do not know (%)
Q1 Interest	74.5	18.7	6.8
Q2 Inflation	71.6	16.2	12.2
Q3 Diversification	36	44.6	19.4
Q4 Risk and return	71.9	18.7	9.4
Q5 Risk reduction	68.7	19.8	11.5
Q6 Subtraction	74.1	21.9	4
Q7 Multiplication	73.4	23.7	2.9
Q8 Division	82.7	15.1	2.2
Q9 Calculation of percentages	84.9	14.7	0.4

Q, question.

calculations is necessary for budgeting, saving and understanding of financial statements and several aspects of being an informed consumer of financial services. To this effect, the survey also included four numerical questions that tested the respondents' ability to perform simple numerical calculations, such as subtraction, division and multiplication. Of the respondents, 74.1% were able to compute a simple subtraction question, 73.4% were able to complete a multiplication calculation, and 82.7% and 84.9% were able to answer the questions that tested the ability to do division.

In this study, joint probabilities of providing correct responses to the financial literacy questions were also calculated to show how many people were able to provide correct answers to the three standard questions for measuring financial literacy. Responses are presented in Table 4.

Results show that only 19.8% could answer all three questions correctly, 51.1% answered only two questions correctly, 19.8% answered only one question correctly and 9.4% had no correct responses to any of the three questions. To this end, these results show a lower level of financial literacy among SMEs in Zimbabwe and are similar to the global research findings (Atkinson & Messy 2011; Cucinelli et al. 2019; Lusardi & Mitchell 2011, 2014; Nunoo & Andoh 2012; Refera et al. 2016). Several past research studies report low levels of financial literacy among respondents, even in countries that are wealthy and well-developed, such as Canada, Netherlands, Switzerland and Sweden, while financial literacy is even lower in Romania and Russia (Lusardi & Mitchell 2011). There is evidence of widespread financial illiteracy around the world, which is a concern to many governments, despite scholars having used different populations to measure financial literacy. In most cases, less than 50% of respondents were financially literate, and in certain cases, average financial literacy scores were as low as 14% (Nicolini, Cude & Chatterjee 2013).

Further analysis was conducted by using the one-way analysis of variance (ANOVA) model, which was employed to investigate whether there are any significant differences in the mean scores of financial literacy across gender, age, marital status, business sector and years of prior business experience. We tested the hypothesis that there are no significant differences between the means of the identified subgroups. The results are shown in Table 5. A 5% level of significance was adopted for the analysis.

TABLE 4: Joint probabilities of answering financial literacy questions correctly.

Validity	Frequency	%	Valid (%)	Cumulative (%)
No correct responses	26	9.4	9.4	9.4
Only one correct response	55	19.8	19.8	29.1
Only two correct responses	142	51.1	51.1	80.2
All three correct responses	55	19.8	19.8	100.0
Total	278	100.0	100.0	-

Source: Analysis of primary data

TABLE 5: Showing results of analysis of variance tests.

Group	<i>p</i>	Conclusion
Age	0.05	Significant
Gender	0.124	Not significant
Marital status	0.009	Significant
Level of education	0.12	Not significant
Business sector	0.033	Significant
Years of operation	0.198	Not significant
Prior experience	0.011	Significant

Note: 95% confidence interval; 5% level of significance.

Findings revealed that there were significant differences in the levels of financial literacy across age groups with a *p*-value of 0.05, marital status (*p* = 0.124), business sector (*p* = 0.033) and prior business experience (*p* = 0.011).

Financial literacy scores across age groups

Financial literacy scores were relatively low among the older respondents with a mean score of 44.4% and a maximum score of 66.7%, with a mean score of 61.9% among younger respondents. These results show that the older respondents were facing challenges with financial capability, yet it is expected that they should make sound decisions post retirement. Differences in mean scores across age groups were found to be significant with a *p*-value of 0.05. These results are consistent with those reported by Gerardi et al. (2013), Xu and Zia (2012), Kadoya 2016; Murendo and Mutsonziwa (2016), who found that financial literacy levels were low among members of the older population. Korniotis and Kumar (2011) as well as Gamble et al. (2015) suggest that this could be a result of a decline in cognitive ability as one ages.

Financial literacy scores across gender

There were no significant gender differences noted in financial literacy with women scoring a mean of 67.1% and their male counterparts with a mean of 71.6% and a *p*-value of 0.124. While there is a general consensus among researchers that there are large gender differences in financial literacy, with women having lower levels of financial literacy than men (Alhenawi & Elkhali 2013; Cupak et al. 2018; Fonseca et al. 2012; Hasler & Lusardi 2017; Kadoya 2016; Lusardi & Mitchell 2011; West & Worthington 2016; Xu & Zia 2012), the results in this case indicate otherwise. Both men and women had above average financial literacy scores. This result could be because in Zimbabwe there are a number of policy initiatives that have been introduced that are targeted at women empowerment, with a full-fledged Ministry of Gender and Economic Empowerment aimed at reducing gender inequalities.

Financial literacy scores across marital status

Significant differences in the financial literacy levels across marital status were noted with a *p*-value of 0.009. The divorced

and widowed have low financial literacy scores with a mean of 46.7% and 53.9%, respectively, while their married counterparts have higher levels of financial knowledge with a mean score of 71%. Preston and Wright (2019) found marital status to be associated with gender differences. Past research explains low financial literacy among the divorced and the widowed to be a result of the absence of marriage partners who are key in helping to make financial decisions (Mahdavi & Horton 2014; Van Rooij, Lusardi & Alessie 2011). The married are able to make sound financial decisions due to the assistance received from spouses. However, Hsu (2010) found out that older women became financially literate when they became widows, as they took more responsibility for their finances in the absence of a marriage partner.

Financial literacy scores across educational levels

Differences in financial literacy scores were noted across levels of education. Those with primary education level and no formal education scored lower with an average of 59.2% and 61.1 %, respectively, while those with higher levels of education scored higher with a mean of 76%. These results were consistent with those of Lusardi et al. (2014), who found that knowledge of asset pricing was low (25.5%) among respondents with less than a high-school qualification and was high for those with a college education (50%). However, by contrast, Mahdavi and Horton (2014) found that even the most educated women had low levels of financial literacy. West and Worthington (2016) also found that financial literacy was higher among the educated. The differences noted in this study were not significant, with a *p*-value of 0.12 mainly because a majority of the SMEs are established by the educated who are school graduates with a high level of literacy. Ministry of small and medium enterprises and Cooperative Development has been conducting a number of training sessions to equip entrepreneurs with the necessary skills to operate businesses successfully. Findings from the World Bank (2012) Finscope survey in Zimbabwe also revealed that 73% of business owners were skilled either formally or informally, hence, improving their financial capability.

Financial literacy scores across business sectors

There were notable differences in the levels of financial literacy across the various business sectors. Those in the art, entertainment, education and sport sector as well as those in the agricultural sector scored above average with a mean of 79% (*S* = 19), and those in the manufacturing sector had the lowest level of financial literacy with a mean score of 62% (*S* = 21.2). This finding can be explained by the intensity of daily activities experienced in the entertainment, transport and the agricultural sectors, requiring that they need to be literate to cope with the volume of daily activities. According to World Bank (2012) Finscope survey, most SMEs are found in the agricultural sector where there are daily business transactions that prompt them to improve their financial capability.

Financial literacy scores by years of operation

Research findings reveal that businesses that had been in operation for less than 2 years had a high level of financial literacy with a mean score of 71.7%. Those that had been in operation for 6–10 years had lower financial literacy scores with a mean of 61.6%, and those that had been in operation for more than 10 years had a mean score of 63%. However, these differences were not statistically significant as signified by a p -value of 0.198.

Financial literacy scores by business experience

A downward trend in the level of financial literacy across business experience was noted. Significant differences were reported with a p -value of 0.011. Business owners who had experience for less than 1 year had a mean score of 69%, while those who had experience for 2 years had a mean score of 75%. However, a decline in the mean score is noted as business experience increases, as those who had experience for 6–10 years have a mean financial literacy score of 64% and those with more than 10 year of experience have the lowest mean score of 62%.

Overall financial literacy score for the study of population

The average financial literacy score of the respondents was 69.28% with a standard deviation of 23.9% and a minimum score of 0% and a maximum score of 100%, as shown in Table 6.

The principal component analysis was used to extract selected variables to explain the determinants of financial literacy. The analysis revealed the items that were answered similarly by the participants. Kaiser–Meyer–Olkin (KMO) and Bartlett tests were used to assess the adequacy of the sample by determining the strength of the relationships among variables. For the current study, the KMO and Bartlett tests were conducted and results are presented in Table 7.

As shown in Table 7, the KMO is 0.755, hence, fulfilling the test of adequacy. The Bartlett's test results are significant

TABLE 6: Overall financial literacy scores.

Financial knowledge scores	N	Minimum	Maximum	Mean	Standard deviation
Financial knowledge score (%)	278	0.00	100.00	69.8241	23.90864
Valid N (list-wise)	278	-	-	-	-

TABLE 7: Principal component analysis for financial literacy.

Test	Narrations	Results
Kaiser–Meyer–Olkin measure of sampling adequacy	-	0.755
Bartlett's test of sphericity	Approx. Chi-square	515.452
	<i>df</i>	36
	Sig.	0.000

Note: Extraction method: Principal component analysis.

Approx., approximate; Sig. significance.

with a p -value of 0.000, which is less than 0.005. The two measures meet the minimum requirement to proceed with the analysis.

The analysis extracted two components that explain the financial literacy of SMEs, which indicate the knowledge of interest rates and inflation. These components have eigenvalues that are above 1, as shown in Table 7. The two components account for 46.8% of the total variance, with the first component explaining 32.3% of the total variance and the second component accounts for 14.6% of the total variance. Table 8 is the total variance explained table and shows all the factors extractable from the analysis along with their eigenvalues, the percentage of variance attributed to each factor and the cumulative variance of the factor and the previous factor.

Extraction method: Principal component analysis

A scree plot was also extracted to confirm the results of the total variance explained. The scree plot is a graph of the eigenvalues against all the factors, which helps in determining the factors that can be retained. Below is a graphical presentation of the scree plot.

Table 9 shows the rotated component matrix for financial literacy presenting the factor loadings for all the variables. The first four variables have high factor loadings for component 1, while the other four have high factor loadings for component 2, confirming that the variables explaining financial literacy of SMEs are indicating the knowledge of interest rates and knowledge of inflation.

Conclusion

The study concludes that financial literacy among SMEs is relatively low. This population cohort lacks adequate financial knowledge mainly in areas of interest rate determination and knowledge of inflation but is able to do subtraction, multiplication, addition and division. Low levels of financial literacy were more pronounced among the young and the aged, those in the wholesale and retail sector, the manufacturing sector and the construction industry. Low financial knowledge was also noted among

TABLE 8: Total variance explained for financial knowledge.

Component	Initial eigenvalues			Extraction sums of squared loadings	
	Total	% of variance	Cumulative %	Total	% of variance
1	2.905	32.274	32.274	2.905	32.274
2	1.312	14.576	46.850	1.312	14.576
3	0.983	10.923	57.773	-	-
4	0.912	10.139	67.911	-	-
5	0.799	8.875	76.787	-	-
6	0.687	7.637	84.424	-	-
7	0.641	7.121	91.545	-	-
8	0.517	5.749	97.295	-	-
9	0.243	2.705	100.000	-	-

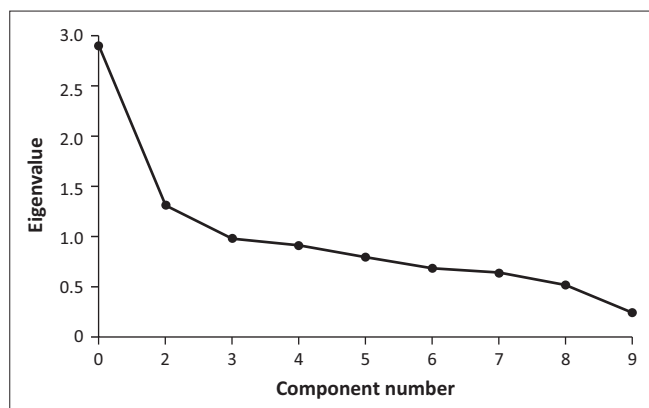


FIGURE 1: Scree plot for financial literacy.

TABLE 9: Rotated component matrix† for financial knowledge.

Question	Component	
	1	2
Q20R	0.780	0.335
Q21R	0.773	-0.047
Q19R	0.746	0.375
Q17R	0.545	0.109
Q16R	0.409	-0.065
Q15R	0.051	0.690
Q14R	-0.016	0.642
Q18R	0.058	0.629
Q22R	0.290	0.586

Note: Extraction method: Principal component analysis.

Values in bold indicate high factor loading for component.

Q, Question.

†, Rotation method: Varimax with Kaiser Normalisation.

those SMEs with less than a year of business experience. Factors that were noted to influence financial literacy were inflation and interest rate determination. The study recommends the introduction of financial literacy among small business owners so as to tap into the benefits of financial knowledge. Further, it is recommended that the educational curriculum emphasises more on inflation and interest rate determination among other financial literacy variables. There is a need to extend the measurement of financial literacy to other population cohorts, as this will facilitate the crafting of a comprehensive financial literacy strategy.

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Authors' contributions

M.M. was the main author of this article. M.S. provided guidance as the thesis supervisor, and B.M. assisted with data analysis and ideas for improvement of the article.

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