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Small business performance: Does access to finance matter?

Evidence from SADC using FinScope surveys

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Executive Summary

This paper reports on the determinants of small business access to finance (both formal and informal) in 5 countries in the SADC region using data from FinScope surveys. It also reports on the link between access to credit and performance and the following insights have been drawn.

Majority of businesses in the MSME sector are micro-enterprises whose economic contribution is limited: A large proportion of MSMEs in the 5 countries in the SADC region are micro-enterprises with the owner being the only employee. This means that the economic contributions of the MSME sector are limited.

A number of small business owners start their businesses with an entrepreneurial motive: A reasonable proportion of small business owners start their business with an entrepreneurial motive. This provides opportunities for governments to offer targeted business support services as these types of enterprises are likely to succeed with adequate support.

Most small business owners use own capital to finance start-ups: Most small business owners finance start-ups using their own savings. This might lead to underfunded start-ups that remain stagnant or even fail.

Small business participation in the manufacturing sector is marginal: Despite the vitality of the manufacturing sector in transforming countries that heavily rely on agriculture, only a small percentage of small businesses participate in this sector.

Only a small proportion of small businesses supply to the public sector: Government support to small businesses is critical and this can be accomplished through awarding public sector contracts. However, small business in the region provide a small proportion of their goods and services to the government.

Lack of access to finance is the primary obstacle to start-up and growth: For large proportions of small businesses, lack of access to finance is a serious obstacle to start-up and growth.

Create conducive business environment for MSMEs to thrive: Development of a vibrant MSME sector requires creating a business environment that encourages small businesses to thrive. This includes, among others, provision of business support, awarding government contracts, ensuring that small businesses have access to credit both at start-up and growth stages.

Business support programs that target small business owners with entrepreneurial motive is likely to be effective: A good number of small business owners start their

businesses with entrepreneurial motives and this provides opportunities for governmental agencies to target this group in providing business support.

Promoting alternative financing schemes for start-ups will help small firms to start operations with adequate capital: Most small business owners use their own savings to start-up businesses, and this limits their operations and often leads to failure. Alternative start-up financing techniques such as venture capital or government guarantee schemes are likely to alleviate financial constraints that small businesses encounter at start-up phase.

Encourage small businesses to participate in the manufacturing sector by providing incentives: Governments need to provide different incentive schemes to small businesses to increase their participation in the manufacturing sector. The incentives can be in the form of provision of the training on successfully starting up and running small businesses in each industrial sub-sector or provision of place for operation.

Increasing small business supply to the public sector: Lack of market is among the critical challenges small businesses face, and this can be curbed by providing government contracts to small businesses. This can be accomplished by setting up a consortium of small businesses with the required capacity and awarding public sector contracts.

1. Introduction

A recent report by Kelley et al. (2016) highlighted that individuals in Africa display the highest levels of entrepreneurial intention. In addition, small businesses are viewed by governments in many developing countries as a panacea to perennial problems of unemployment and poverty. However, promotion of small business development requires understanding of their characteristics and the challenges they face. This paper is prepared to document the characteristics of "small" businesses in five economies in the SADC region. It also reports on the determinants of access to credit and the relationship between credit and performance.

Small and medium enterprises contribute to economic development by increasing national output, creating jobs and reducing income inequality and poverty (Fanta, 2015). Small businesses also serve as vehicles for entrepreneurship and sources of employment and income thereby driving economic growth (Thurik & Wennekers, 2004). They can also foster sustainable development if they are integrated into community development (Vargas, 2000). They play an important role in both developed and developing countries. For instance, in the US, small businesses contributed 48% of sales, 50% of the nation's private workforce and 64% of the "net new jobs" between 1993 and 2011 (SBA, 2014).

Most small businesses fail and this is a global phenomenon, albeit more severe in developing countries. For instance, only 20% of small businesses in the US survive the first year, and only 3% survive the first five years (SBA, 2014). The failure rate of SMEs is high in sub-Saharan Africa (Boubakary, 2015). External and internal factor are responsible for failure of small businesses. While the external factors include limited access to finance, poor market conditions, and lack of institutional support, internal factors include lack of strategy and vision, low educational levels, and inadequate social capital (Franco & Haase, 2010).

Finance plays a vital role in small business survival and growth (Chan & Lin, 2013), and the lack of which is the major cause of failure of such types of businesses. Access to finance is determined by macro-level and firm-level factors. At macro-level, access is determined by the legal and business environment and the efficiency of the banking system (Ardic et al., 2012). Besides, McNamara et al. (2016) report that SME debt is higher in countries with more efficient bankruptcy environments in terms of debt recovery and in countries with less stringent regulatory environments by way of lower capital regulatory requirements for banks. Market structure also plays a role in such a manner that small businesses are less likely to access credit in a market dominated by large banking institutions (Cowling, 2016) and in some cases by community banks (Jagtiani et al., 2016). Similarly, rural banking institutions and state banks are found to promote regional entrepreneurial activity and facilitate small business development (Hasan et al., 2015).

At a firm-level, such factors as life-cycle profile of a firm, gender, age and educational level of the owner are important drivers of access to external finance. Life-cycle stage determines small business demand for credit because firms are more dependent on financial intermediaries in the early periods of their lives (Yihäinen ,2017) and their need for credit starts to wane as they reach maturity stage (Cole & Sokolyk, 2016). Gender is the other important determinant of access to finance such that women are less likely than men to access credit or pay higher interest on a loan (see Alesina et al., 2013). In addition, women owned businesses are also found to have lower demand for credit (Cowling, 2016).

Access to credit is also determined by age, experience, and educational level of the owner (Wu et al., 2008). In addition, capital-intensive small firms with mostly tangible assets have relatively high bank loan borrowings while non capital-intensive firms with fewer tangible assets have relatively low bank debt (Wu et al., 2008). Access can also be determined by business support provided to small businesses by government agencies. In the absence of business support, firms report that they were discouraged from borrowing because they feared being turned down, and according to Cole and Sokolyk (2016), one in three discouraged firms would have been approved for credit had they applied for credit. Access is also determined by collateral (Comeig et al. 2014), advertisement (Ding et al., 2016), size, firm growth, tangibility, profit margin, and financial development (Yartey, 2011).

Small business survival and growth is affected by a number of factors that can be fairly divided into macro-level and firm-level factors. The macro-level factors include tax policy (Borchers et al., 2015), business support (Cumming & Fischer, 2010; Mole et al., 2009), trade liberalisation (Sundaram, 2015), government guarantees (Pergelova & Angulo-Ruiz, 2014) and infrastructure (Shideler & Badasyan, 2012).

The firm-level factors that affect business performance include participation in alliances (Brouthers, 2015), size and age of enterprise (Blackburn et al., 2013) , gender(Baliamoune-Lutz & Lutz, 2017), family ownership (De Massis et al., 2015) ,access to finance (Osei-Assibey, 2013), family background, necessity and opportunity motivations (Eijdenberg et al. ,2015) , the self-esteem and the ethics of the leader (Boubakary ,2015) ,business planning, business objectives (Xiang & Worthington, 2015), internationalisation (Lee et al., 2012), proper employee staffing, adequate capital inflows and partnerships (Hyder & Lussier,2016).

Studies that unravel the challenges faced by small businesses and those that identify factors that determine their access to credit in the SADC region are limited. Therefore, this paper is prepared to fill the gap by documenting the characteristics of small businesses in the region and also by identifying the factors that determine access to credit and by examining the relationship between access to credit and performance. The rest of the paper is structured as follows. Section two presents the data and methodology. The results of the descriptive and econometric analysis are presented in Section three, while section four presents the conclusions followed by implications for policy presented in Section five.

2. Data and methodology

2.1. The data

Data for the study were obtained from nationally representative FinScope MSME Surveys conducted in different years in five SADC member countries listed in Table 1. South Africa was excluded due to the fact that the country's business environment in which small businesses operate and the nature of the financial market is significantly different from the other countries. We define MSMEs using the number of employees and this differs across countries. As reported in Table 1, MSMEs are defined in Malawi and Mozambique as businesses employing not more than 100 workers. The cut-off point for Lesotho and Zambia MSMEs is 50 while it is 75 for Zimbabwe.

Table 1: Sample size and year survey was conducted

No	Country	MSME definition[2] (maximum number of employees)	Year of survey	Sample size	Population of MSME owners to which the survey applies
1	Lesotho	50	2016	2,182	76,068
2	Malawi	100	2012	1,997	758,118
3	Mozambique	100	2012	3,429	4,550,384
4	Zambia	100	2009	4,801	3,880,646
5	Zimbabwe	75	2012	3,222	2,748,888
	Total			**15,631**	**12,014,104**

2.2. Methodology

The analysis of data comprised descriptive statistics and graphical analysis of cross- country comparisons of different aspects of MSMEs. Two estimation techniques were also used in order to obtain a deeper insight into the determinants of access to credit and the

[2] Micro, small and medium enterprises are variously defined in different countries. In Malawi, micro-enterprises are those that employ at most 4 workers, small enterprises are those that employ between five and 20 workers, and medium enterprises are those employing between 21 and 100 employees (MIRTDC, 1996). In Mozambique, micro-enterprises are those that employ at most five workers, small enterprises are those that employ between six and 25 workers, and medium enterprises are those employing between 26 and 100 employees (IFC,2010). In Zambia, micro-enterprises are those that employ at most ten workers, small enterprises are those that employ between 11 and 50 workers, and medium enterprises are those employing between 51 and 100 employees (MCTI, 2008). In Zimbabwe, micro-enterprises are those that employ at most 5 workers, small enterprises between 6 and 40 (SEDC Amendment, 2011). For Lesotho, micro-enterprises are those that employ up to 5 employees, and small enterprises are those that employ from 6 to 20 employees (MSME policy for Lesotho, 2015)

relationship between access to credit and business performance. Logistic regression models were used to estimate the determinants of access to credit (for details on model specification, see Appendix A). The Ordinary Least Square (OLS) estimation technique was used to determine the link between access to credit and business performance (for details on model specification, see Appendix A). The definition of variables included in the analysis is given in Table 3 (in appendix B). Cross-country comparisons were made on credit access, performance and related variables.

Our model utilised variables on performance initially proposed by Lussier and Halabi (2010) and validated later by Halabi and Lussier (2014). This includes, among others, financial and accounting information, education, partners, marketing, firm age, and motivation for starting a business. To isolate country-specific characteristics, the econometric models were implemented at a country level and to understand differences across sectors the models are implemented for each sector separately, i.e., agriculture, wholesale, manufacturing, and services.

3. Analysis and results

3.1. Descriptive analysis

The descriptive analysis comprises graphical analysis and descriptive statistics. The descriptive statistics presents key variables used in the econometric analysis while the graphical analysis emphasizes on cross country comparison of only selected variables.

3.1.1. Descriptive statistics

The descriptive statistics show interesting cross-country differences in small business profile and owner characteristics. As shown in table 4 in appendix B, people own up to a maximum of 6 businesses and cross-country comparisons shows that owning multiple businesses is more prevalent in Zimbabwe than the other countries. Similarly, small businesses in Zimbabwe employ on average more workers than businesses in the rest of the countries. In terms of average age of businesses, while Lesotho and Mozambique have relatively younger small businesses, Zambia has relatively older businesses. This might reflect the relative resilience of small businesses in these countries. A higher average age of small business in Zambia might also mean the business environment is more conducive for small businesses to thrive in that country compared to the other countries.

A comparison of average annual turnover shows that small businesses are relatively bigger in Zambia and Zimbabwe compared to the rest of the countries. This also confirms our earlier conclusion based on average number of employees. Majority of the businesses are rural based as evidenced by only 20 percent of small businesses operating in urban areas. This is the case in all the countries except Lesotho where 51 percent of small businesses are urban based. Educational level of small business owners varies across countries. Small business owners in Zimbabwe and Lesotho have, on average, a higher level of education

than the rest of the countries. The overall gender split of small business ownership is even between males and females with a slight difference across countries. For instance, males dominate small business ownership in Zambia while females dominate in Lesotho and Mozambique.

A little more than half the owners run their business on a full-time basis implying that small businesses are managed side-by-side with other activities that includes among others, farming, running another small business, employment at private or government organisation. Cross-country comparisons show that while the majority of owners in Mozambique run their business on a full-time basis only a third of owners in Lesotho and Malawi devote full-time to their businesses. However, examination of hours spent on business does not show a significant variation across countries. Mozambicans and Malawians spend relatively more time on their business than owners in the other countries. Interestingly, owners spend, on average, at least 5 to 8 hours a day in all the five countries.

A small business is the only source of income for most owners. However, cross-country comparisons show variations across countries. For instance, a small business is the only source of income for 84% of owners in Mozambique and for 70% of owners in Lesotho compared to only 21% in Zambia. Co-ownership of a small business varies across countries with the highest of 14% of owners in Malawi reporting to co-own a small business and the lowest of 1% of owners in Mozambique reporting to co-own a business.

Examination of motives for starting a small business shows that nearly half of owners founded a business to boost their income and a third started a business because they wanted to use their skills or take advantage of a business opportunity. Those who set up a business out of being desperate due to inability to get a job or having being laid out by their employer are only 16% of the total.

Small business owners try to win clients using different mechanisms such as offering credit or by advertising their products or services. Only 10% of small business owners advertise their businesses using such media as radio, TV, telephone, etc. while majority of the small business owners advertise through traditional mechanisms. Small business owners also allow sales on credit and 40% of small businesses use this as a way to boost sales by attracting customers. Cross-country comparisons show that the majority of small business offer sale on credit in Lesotho and Zimbabwe. While half the Malawian small businesses sell on credit, this is rare in Zambia and Mozambique.

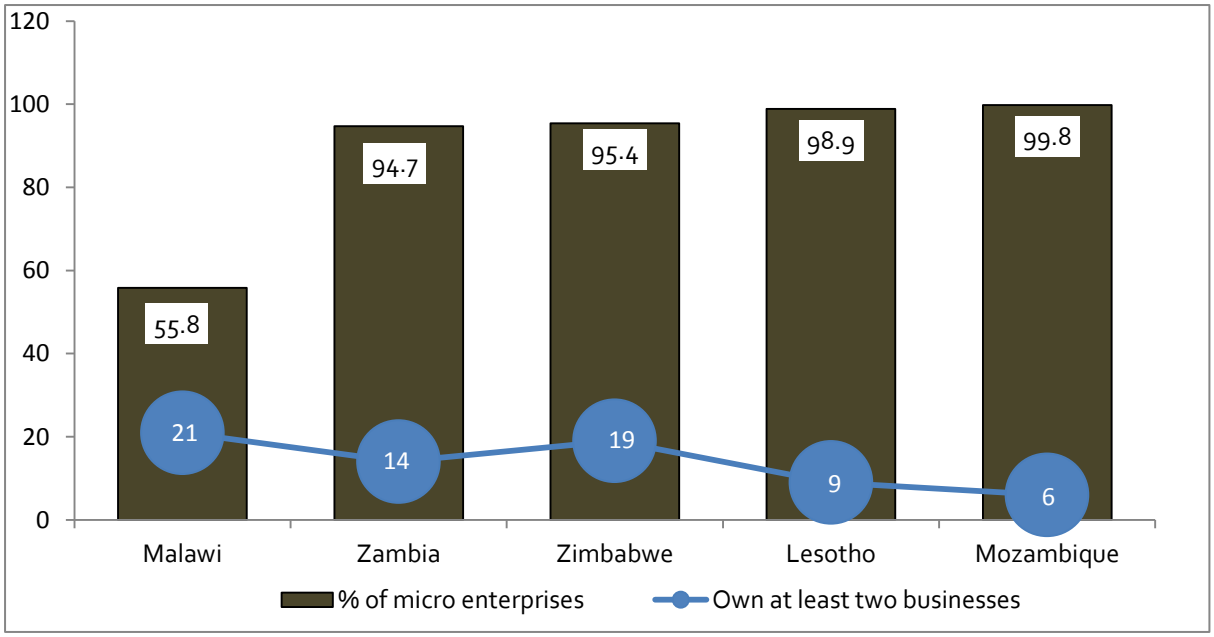
Lack of financial transparency is considered one of the major obstacles of small business access to credit, and hence we examined the extent of financial transparency by looking at the proportion of businesses that keep books of accounts. Financial transparency is relatively higher in Zimbabwe where half the small businesses keep books of accounts, while it is low in Mozambique where only 18 percent of small businesses keep books.

Survival and growth of small businesses is partly determined by the support that they receive from governmental and non-governmental organisations. However, only 10 of percent of small businesses report to have received support. Support is relatively low in Mozambique as only 2 percent of the businesses report to have received support. This might be one of the explanations for low access of small businesses to either bank or other formal credit and most small businesses relying on informal credit.

3.1.2. Graphical analysis

Micro-enterprises constitute a significant proportion of the MSME sector in all the countries studied. As shown in Figure 1, majority of the MSMEs are micro-businesses in Lesotho, Mozambique, Zambia, and Zimbabwe while the figure for Malawi is only 56 percent. Cross-country comparisons of a number of businesses owned shows that the majority of adults own a single business. Ownership of two or more businesses is most prevalent in Malawi and Zimbabwe while it is not very common in Mozambique and Lesotho.

Figure 1: Proportion of micro-enterprises (those employing at most five employees)

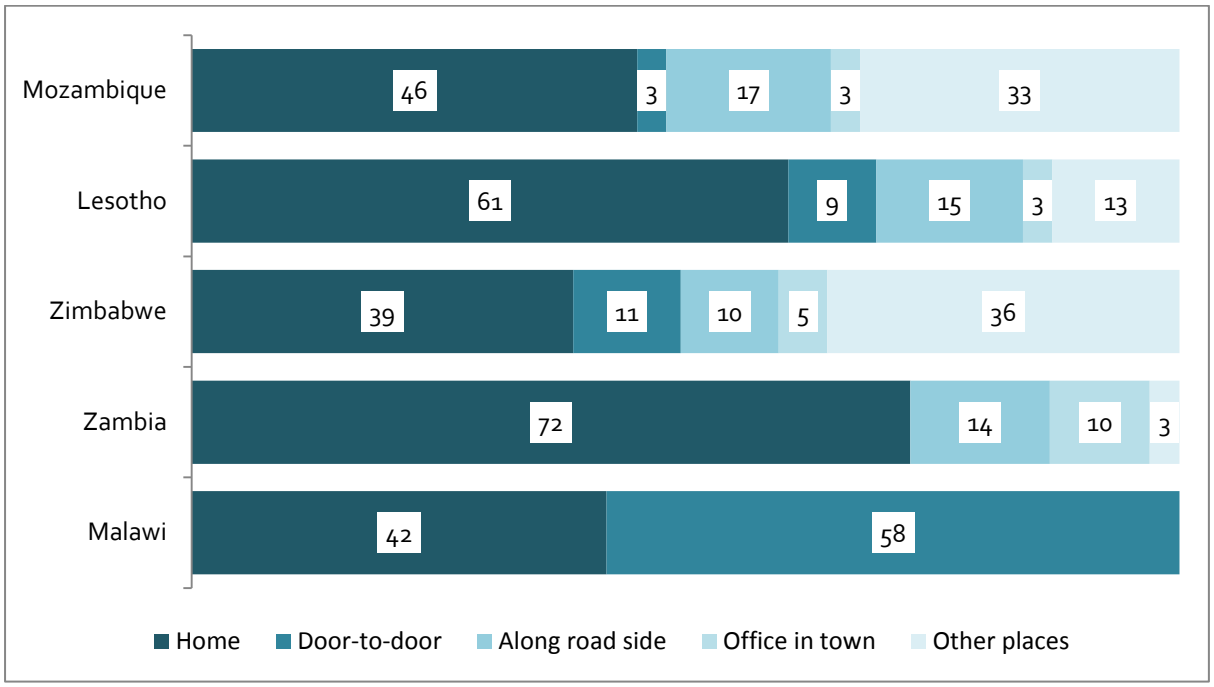


Source: FinScope

MSMEs mostly operate either from home or through door-to-door sales of goods and only a small proportion operate from office in town. Cross-country comparisons as depicted in Figure 2 shows that 75 percent of small businesses in Zambia operate from home compared to 61 percent in Lesotho, 46 percent in Mozambique, 42 percent in Malawi and 39 percent in Zimbabwe. Door-to-door sales is a commonplace in Malawi where 58 percent of small businesses use this as the only delivery mechanism. Selling goods along the road-side is prevalent in Mozambique, Lesotho, Zimbabwe, and Zambia while only a few have offices in the town from which they operate. The highest number of small businesses operating from

office is reported by those in Zimbabwe where 5 percent of small businesses have office in town compared to 3 percent in Zambia, Mozambique, and Malawi.

Figure 2: Place of doing business by country



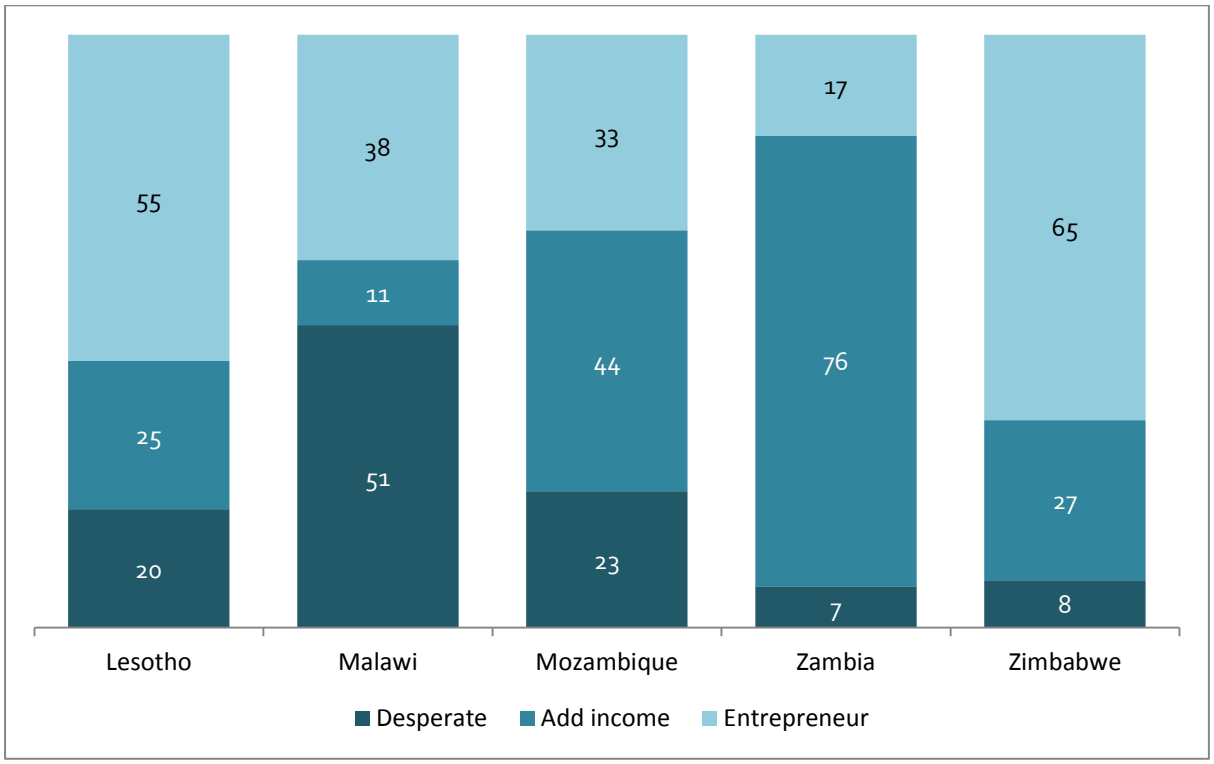
Source: FinScope

People can start new businesses for many reasons such as due to job losses, to supplement their income from farming or from employment, or to take advantage of a business opportunity, or to use their special skills to sell new products or services. Literature reports that those that start a business with entrepreneurial motives are more likely to succeed compared to those that start a business out of desperation or to supplement income. Upon examining the motives for starting a business across countries (as shown in Figure 3), it was found that most businesses in Malawi were started because of a lack of job opportunity due to the business owner having been previously laid off or the inability to find a job at all. Small business owners that started a business out of being desperate to earn an income constitute 20 percent in Lesotho, 23 percent in Mozambique, 7 percent in Zambia, and 8 percent in Zimbabwe.

Starting a small business to supplement income is the other important reason with 76 percent of small business owners in Zambia citing this as a primary reason compared to 44 percent in Mozambique, 27 percent in Zimbabwe, 25 percent in Lesotho and 11 percent in Malawi. Entrepreneurial motive is more prevalent in Zimbabwe and Lesotho where 65 percent and 55 percent of small business owners respectively cited this as a reason for

staring a small business. Entrepreneurial motive is the lowest in Zambia where only 17 percent of owners cited this as a reason for starting a business.

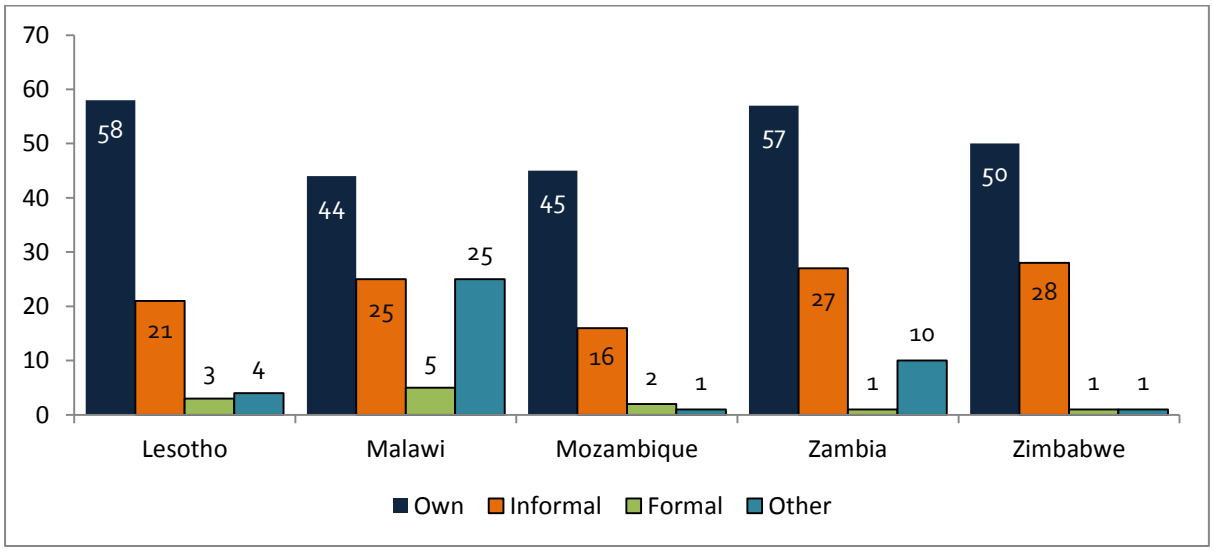
Figure 3: Motives for starting a business (% of business owners)



Source: FinScope

Financing a start-up is one of the major challenges that entrepreneurs face when starting a business. The lack of external finance forces entrepreneurs to use own money or borrow from family or friends in financing start-ups. However, the limited availability of own money and its magnitude places a serious constraint on firm size at start-up and also on growth potential. A comparison of source of start-up capital across countries shows that most small business owners used own money to finance start-ups. In fact, a slight variation across countries is evident where 58 percent in Lesotho cite using this as a source of start-up capital compared to 57 percent in Zambia, 50 percent in Zimbabwe, 45 percent in Mozambique and 44 percent in Malawi (see Figure 4). Informal finance is the other important means of financing start-ups. Almost a third of small business owners in Zimbabwe and Zambia rely on informal finance compared to 25 percent in Malawi, 21 percent in Lesotho, and 16 percent in Mozambique.

Figure 4: Source of start-up capital

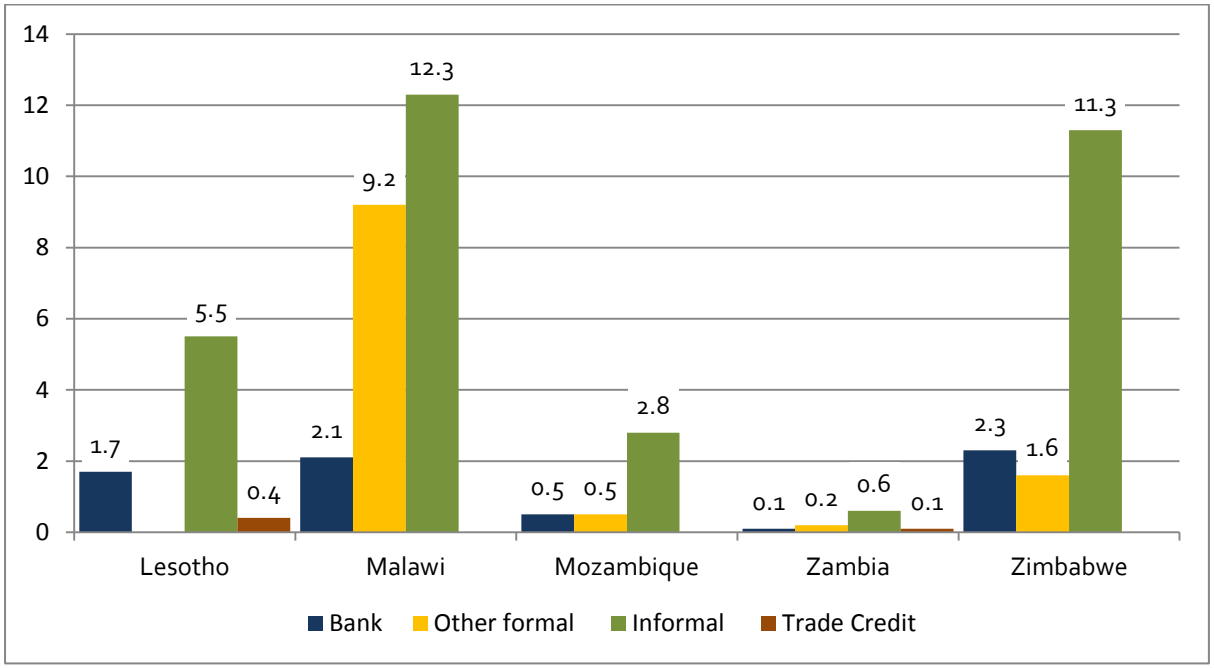


Source: FinScope

Most small businesses rely on informal credit and very few of them access credit from bank or non-bank financial institutions. As shown in Figure 5, a maximum of 2.3 percent of MSMEs have access to bank credit which in Zimbabwe while those in Zambia have the least access to bank credit. The lower tendency of accessing bank credit in Zambia might be due to majority of the owners using own capital which was evident from Figure 5 which shows that 57 percent of small business owners finance start-ups using own money. Zambian MSME owners also do not have access to other formal or informal credit. Despite its potential as alternative source of finance for MSMEs, trade credit is accessed by a limited number of MSMEs. For instance, only 0.4 percent of small businesses in Malawi and 0.1 percent in Zambia use trade credit to finance working capital.

Credit from other formal institutions is also scarce, such as microfinance institutions. While 9.2 percent of Malawian MSMEs have access to other formal credit, other formal credit is not a common place in the rest of the countries. Relatively more small business owners use informal credit but informal credit is inherently problematic. Firstly, informal loans may not be large enough to be used for business expansion. Secondly, informal loans are expensive and hence at times erode the revenue of small businesses.

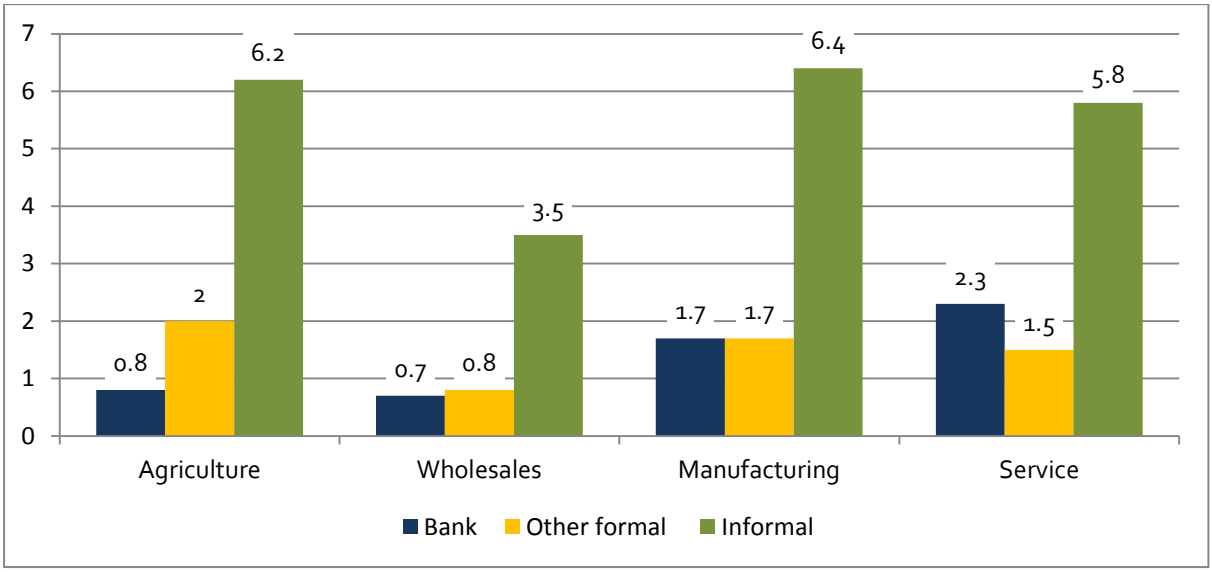
Figure 5: Composition of credit access by country (%)



Source: FinScope

To check if there are differences in access for credit across sectors, MSMEs were segmented into four groups as agriculture, wholesale, manufacturing, and service. As shown in Figure 6, the overall access to credit is low and there are noticeable variations in the source of credit across the sectors. Bank credit is relatively more accessed by small businesses in the service sector and least accessed by those in the wholesale and agricultural sectors. Credit from other formal institutions is also low and small businesses in the agriculture, manufacturing, and service sector have relatively better access to credit from other formal institutions. Relatively more small businesses rely on informal credit with the extent of use of informal credit being higher among small businesses in agricultural, manufacturing and service sector than in the wholesale sector.

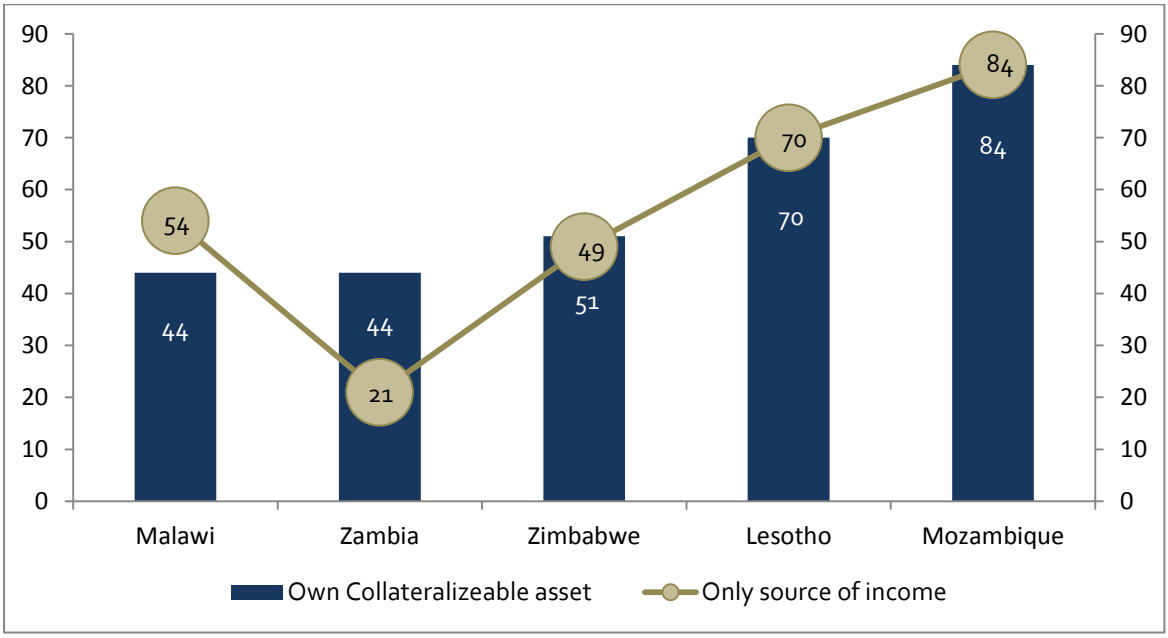
Figure 6: Composition of credit access by sector (%)



Source: FinScope

Small businesses are not financially transparent which increases the information asymmetry problem that leads to lenders relying more on collateral to extend credit. This, in turn, places a serious setback on small business access to formal credit because small businesses invest proportionately less in long-term assets that can be pledged as collateral. We compared ownership of collateraliseable assets in the form of property, vehicles, and equipment across countries and checked whether this is correlated with the business being the only source of income. As shown in Figure 7, while ownership of collateraliseable assets is higher in Mozambique where 84 percent of small businesses report to own collateraliseable assets, it is low in Malawi, Zambia and Mozambique where at most 50 percent of small businesses have collateraliseable assets. Interestingly, ownership of collateraliseable assets is correlated with the proportion of small business owners for whom the business is the only source of income. The correlation might suggest that those for whom the business is the only source of income put more resources into their business.

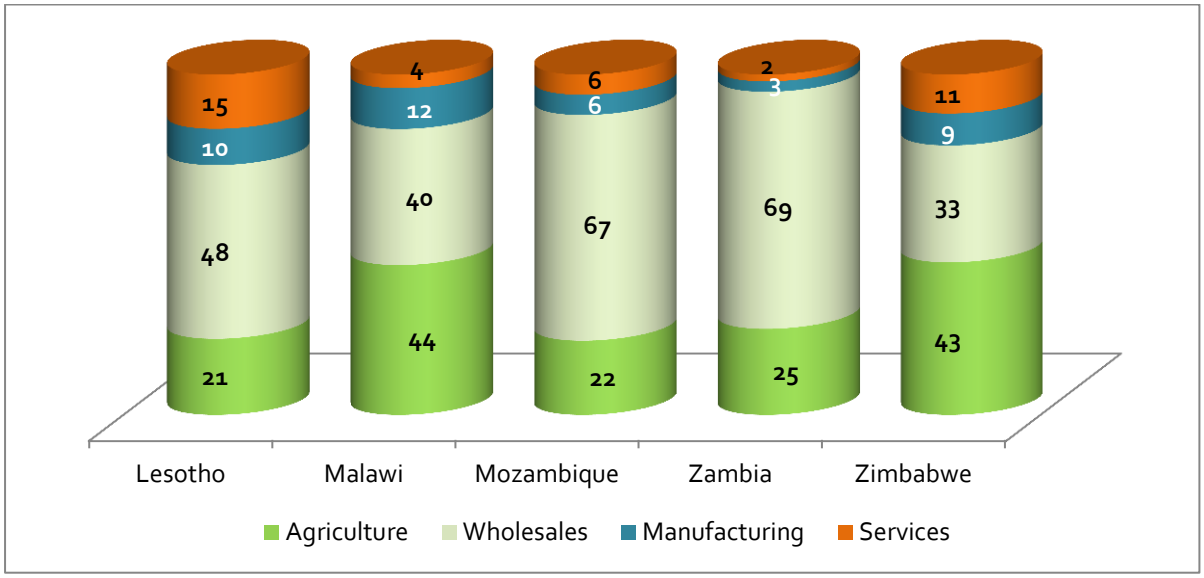
Figure 7: Own collateraliseable assets vs business only source of income



Source: FinScope

Sectoral comparison of small businesses shows that most of them operate either in the wholesale or agricultural sector, albeit with a slight variation across countries. As shown in Figure 8, while most small businesses in Malawi and Zimbabwe operate in the agricultural sector those in Mozambique and Zambia operate in the wholesales sector. Only a small percentage of small businesses operate in the manufacturing sector which would pose a challenge in creating a vibrant small business sector that can be linked to large businesses in transforming economies.

Figure 8: Sector to which the business belongs (% of businesses)

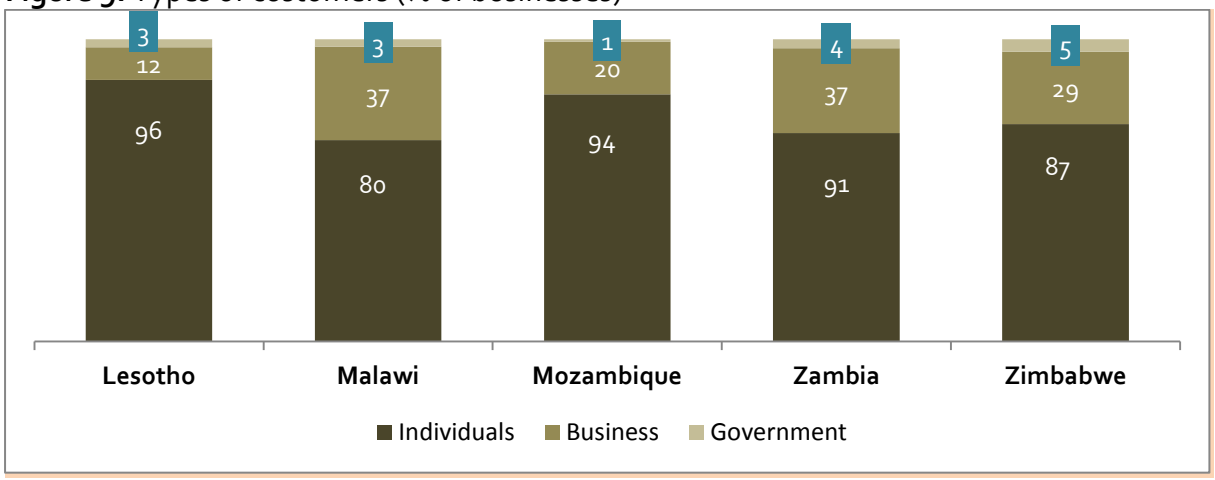


Source: FinScope

Finding a reliable customer base is among the challenges small businesses face and it is also among the reasons for small business failure. Awarding public contracts to small businesses is considered one way of helping small business operators build a customer base and ensure sustainability. In addition, assisting small businesses take part in the value chain of large businesses allows them to ensure a reliable market that would help them survive even when market conditions are tough. As shown in Figure 9, most small businesses rely on individuals as their primary customers. Individual customers constitute 96 percent of the customer base for small businesses in Lesotho, 94 percent in Mozambique, 91 percent in Zambia, 87 percent in Zimbabwe and 80 percent in Malawi. Businesses constitute 37 percent of customers of small businesses in Malawi and Zambia. The public sector constitutes only a small proportion of small business clients. With 5 percent of their

customers in the public sector Zimbabwean small businesses have has the highest link with the government compared to small businesses in the rest of the countries.

Figure 9: Types of customers (% of businesses)

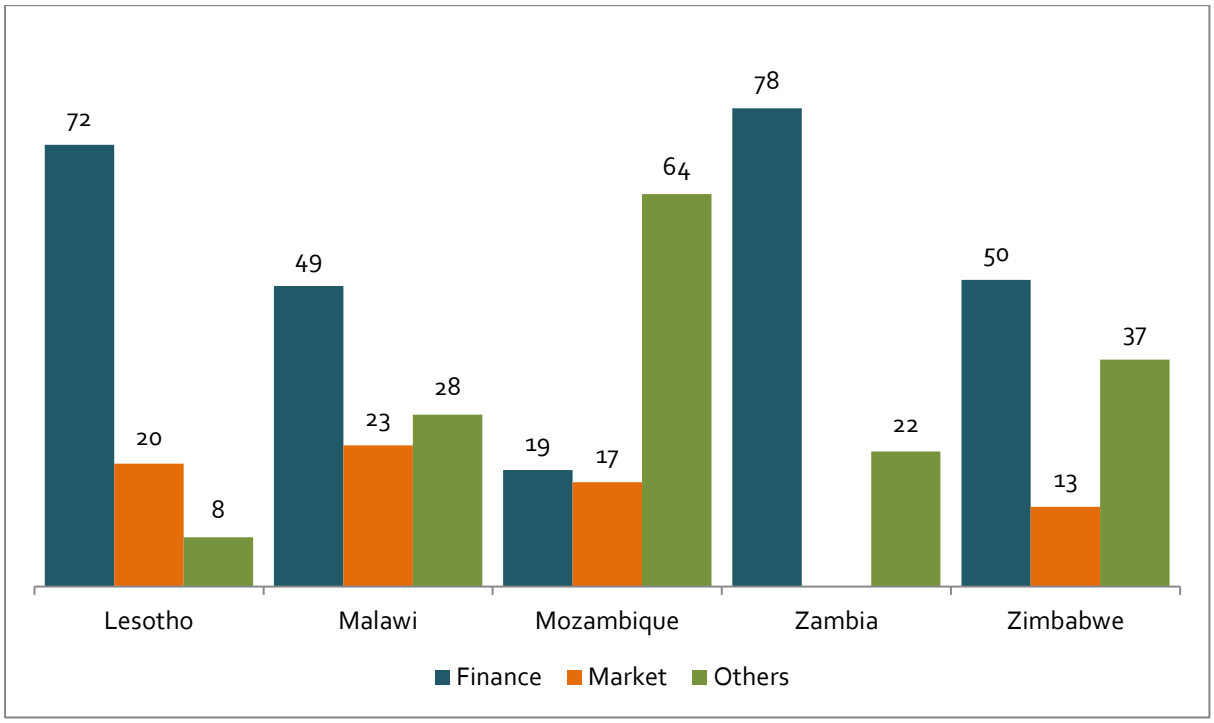


Source: FinScope

Small businesses face multiple obstacles to growth. Small businesses cite numerous constraints to growth such as finance, business licensing, employee productivity, corruption, market, crime and theft, access to land, infrastructure, etc. These were summarised into three major categories as finance, market and others. As shown in Figure 10, lack of access to finance is cited as the primary obstacle to growth in Zimbabwe, Zambia, Malawi and Lesotho. The second most cited obstacle is market-related comprising such problems as competition, lack of customers, lack of enough stock, etc. Market is the second most commonly cited problem in Lesotho while the rest of the problems are commonly cited in Zimbabwe, Zambia, and Malawi.

The fact that finance and market-related problems are the most commonly cited obstacles to small business growth means government support programs in the two areas will help in promoting the development of MSMEs in the countries.

Figure 10: Obstacles to growth (% of MSMEs)



Source: FinScope

The role of business support

The importance of business can be examined by comparing performance of those that received government support in the form of training that involved financial management, marketing, planning, human resource management, etc. We run two sets of analysis using *t* test to examine the effect of business support on performance and employment capability of small businesses. Performance is measured using annual turnover denominated in each country's local currency except Zimbabwe where USD is used. As shown in Table 2, small businesses that received support report a higher average annual turnover than those that did not receive any support. The only exception is Mozambique where those that received support report a lower performance than those that did not receive any support.

This underlines the importance of business support in the sustainability of growth of small businesses and eventually to the development of the small business sector of the economy. In fact, the above claim would be invalid if there is a selection bias that occurs due to governments targeting better or worse performing small businesses. This implies that the selection criteria used by governments needs to be consulted before reaching any useful conclusion about the impact of business support on performance.

Table 2: Business support and annual turnover

Countries	Mean turnover of those that received support	Mean turnover of those that did not receive support	Mean difference	*t* stat (sig)
Lesotho (Loti)	4 851	3 673	1 178	9.8***
Malawi (Kwacha)	1 643 488	593 550	1 049 938	19.96***

Mozambique (Metical)	17 095	25 481	-8 386	-2.65***
Zambia (Kwacha)	2 870 948	2 590 226	280 722	19.78***
Zimbabwe (USD)	22 065	7 530	14 535	80***

Note: *** *significant at 1% level.*

The effect of business support on employment capability of small businesses was also examined by using the number of full-time employees excluding the owner. As reported in Table 3, small businesses that received business support employ, on average, more workers compared to those that did not receive support. Again, we make a cautious conclusion on the impact of business support on employment capability due to potential selection bias.

Table 3: Business support and employment

Countries	Average number of full-time employees of those that received support	Average number of full-time employees of those that did not receive support	Mean difference	*t* stat (sig)
Lesotho	1.72	1.4	0.32	10.79***
Malawi	2.00	1.25	0.75	54.36***
Mozambique	1.28	1.11	0.17	39.39***
Zambia	1.66	1.49	0.17	87.47***
Zimbabwe	3.07	1.96	1.11	161***

Note: *** *significant at 1% level.*

3.2. Econometric analysis

In this section, the results of the econometric analysis are reported where in the first two models, the determinants of access to credit (bank and informal) were examined and the impact of access to credit (bank and informal) on performance were examined in the last two models.

Determinants of access to credit: Bank credit

The first model is run for four countries after dropping Mozambique due to unavailability of data for bank credit. The model included variables related to owner and business characteristics. Owner related characteristics included credit literacy, age, education, gender, and entrepreneurial motive as a reason for starting a business. Business related characteristics included age, co-ownership, collateral, credit sales, turnover, keeping books, location, and receiving business support.

As reported in Table 5 (appendix B), while credit literate owners are more likely to access bank credit in Malawi and Zimbabwe, this is not important in accessing bank credit in

Lesotho and Zambia. Those that started the business with entrepreneurial motive are more likely to access bank credit in all the four countries. This might be due to relatively higher level of commitment of entrepreneurs for the fruition of their business idea by trying to secure credit from banks. Owner's age is often used as a proxy for business experience, and it is variously related to the chance of access to bank credit across the countries. In Lesotho and Zimbabwe, the chance of accessing bank credit increases as age increases up to a certain level after which it starts to decrease. This implies that small business owners older than a certain age are less likely to access bank credit. It means that the financial system in the two countries value business experience only up to a certain age. In Malawi and Zambia, the opposite is true because the chance of accessing bank credit decreases as age increases up to a certain level after which it starts to increase. This implies that younger and older small business owners are more likely to access bank credit, whereas those in the middle are less likely to access bank credit.

Owner's educational level is an important determinant of access to bank credit in all countries. This might be due to both demand-side and supply-side effects. On the demand side, educated small business owners might show a higher demand for bank credit than other forms of credit. On the supply-side, bankers may place more confidence on the performance of small businesses owned by the educated and hence favourably evaluate their loan application. Gender of the owner is the other important factor affecting access to bank credit. Male small business owners are more likely to access bank credit in Malawi and Zimbabwe. In Lesotho, it is female small business owners that are more likely to access bank credit. In Zambia, gender does not have a role in small business's access to bank credit.

The size of the firm, measured using the number of full-time employees, increases small business' likelihood of accessing bank credit in Malawi and Zimbabwe, but decreases it in Lesotho. Number of employees does not have any effect on small business' chance of accessing credit in Zambia. Age of a business increases the chance of access to bank credit in Malawi implying that older businesses have increased demand for bank credit or that loan applications of such businesses are favourably evaluated by bankers. In Zambia, an increase in age increases the chance of accessing credit only up to a certain point while the opposite is true in Zimbabwe where an increase in age decreases the chance of bank credit up to a certain age. Co-ownership of a small business increases the chance of access to bank credit in Lesotho and Zambia while in Malawi and Zimbabwe it decreases the chance of accessing bank credit.

Consistent with previous studies, collateral increases the chance of access to bank credit in all the countries (see Davydenko & Franks 2008 and Steijvers et al., 2010). Collateral has a relatively stronger effect on small business' access to bank credit in Lesotho and Zambia implying that small businesses in the two economies that do not have collateral are likely to face more serious financial constraint. Credit sales can sometimes predict the likelihood of access to bank credit because businesses that sell on credit often have higher demand for

bank credit to finance working capital. However, our analysis shows mixed results. In Lesotho and Zimbabwe, businesses that sell on credit are less likely to access bank credit while those in Malawi and Zambia are more likely to access bank credit.

Small businesses with a higher turnover should ideally be able to secure bank credit. Contrary to expectations, turnover does not have any effect on small business' chance of accessing bank credit in any of the countries. Keeping books of accounts is related to a higher chance of accessing bank credit except in Zambia where no difference is observed between those that keep books and those that do not. Previous studies reported that small businesses that received support are more likely to access credit. This is the case only in Malawi and Zimbabwe. In Lesotho and Zambia, business support does not have any effect on the chance of accessing bank credit. Location is the other important factor that affects the chance of access to bank credit because small businesses based in urban areas are more likely to access bank credit in all the countries. This might be due to urban small businesses engaging in bankable business activities or due to the wider prevalence of banks in urban areas.

Analysis of determinants of access to credit by sectoral categories, namely, agriculture, wholesale, manufacturing and services provides interesting insights. Credit literacy and gender from owner related factors and collateral from business related factors determine access to credit across all the sectors. Credit literacy increases access to both bank and informal credit which suggests that perhaps credit literate small business owners borrow from a bank and also partly rely on informal credit as a supplement. Entrepreneurial motive increases access to credit except for small businesses in the manufacturing sector. Educated small business owners in the agriculture and wholesale sectors are more likely to access credit while those in the manufacturing and service sectors are less likely to access credit.

Business support increases access to bank credit except for small businesses in the wholesales sector. A credit sale is variously related to access to bank credit. While those in the agricultural and service sector that sell on credit are less likely to access bank credit, the opposite is true for small businesses in the wholesales and manufacturing sector. Interestingly, credit sales is related to a higher chance of access to informal credit across all the sectors. This implies that small firms use informal credit as a supplement in financing working capital.

Determinants of access to credit: informal credit

Contrary to expectation, credit literacy increases the chance of accessing informal credit in all the countries except in Zambia where it actually decreases it. A positive relationship between credit literacy and access to informal credit might suggest that even credit literate small business owners have to rely on informal credit due to unavailability of formal credit. While entrepreneurial motive increases access to informal credit in Malawi and Zambia it

decreases access to informal credit in Lesotho, Mozambique, and Zimbabwe. Increase in owners' age decreases the chance of informal credit in four of the five countries suggesting that more experienced business owners are unlikely to rely on informal credit.

Increase in the level of education decreases the chance of informal credit except in Mozambique where the educated are more likely to access informal credit. Informal credit is more likely to be accessed by female business owners in Malawi and Mozambique while male business owners are more likely to access informal credit in Lesotho, Zambia, and Zimbabwe. Combining results from the two models yields interesting insights into the effect of gender on access to credit. In Lesotho, while female business owners rely on bank credit, male business owners rely on informal credit. In Malawi, male business owners rely on bank credit while female business owners rely on informal credit. In Zambia and Zimbabwe, male business owners are likely to rely on both bank and informal credit while female business owners are unlikely to access credit from either source.

Small businesses in Malawi and Zambia are unlikely to rely on informal credit as they grow bigger. In Zimbabwe, the increase in size of business, increases access to informal credit. Size does not matter in Lesotho and Mozambique. Increase in age of a business increases chance of credit only up to a certain age beyond which access to informal credit decreases. Running a business with a partner increases the chance of access to informal credit in Malawi, Zambia, and Zimbabwe while it decreases the chance of accessing informal credit in Lesotho and Mozambique.

Interestingly, collateral is still useful in accessing even informal credit in some of the countries. While collateral increases the chance of accessing informal credit in Mozambique and Zimbabwe it decreases the likelihood of accessing informal credit in Lesotho, Malawi, and Zambia.

Credit sales place additional financial pressure on small businesses and the financial requirement is often met by accessing working capital finance. Our results show that businesses in Lesotho and Malawi that sell on credit are more likely to access informal credit while those in Mozambique, Zambia, and Zimbabwe are less likely to access informal credit. A comparison of results from the two models reveals the existence of substitutability between bank credit and informal credit for financing working capital created by credit sales. This is clear from our results for Lesotho and Zambia where reliance in one precludes usage of the other.

Keeping books of accounts is consistently related to lower chance of accessing informal credit. Combined with our results from the previous models, it is clear that those that keep books of accounts access bank credit and are less likely to access informal credit. Businesses that received support are less likely to seek informal credit and this contrast with our results from the first model that showed a positive effect of support on access to bank credit. Location is related to informal credit such that those that are based in urban

areas are less likely to access informal credit with the exception of businesses in Lesotho where businesses in urban areas still rely on informal credit. Businesses in urban areas in Lesotho simultaneously rely on bank and informal credit which might be due to a need to use each source for a different purpose.

Access to credit: does it improve performance?

The role of bank credit

The theoretical basis of the effect of credit on firm value can be borrowed from Modigliani and Miller (1963) theory of capital structure wherein they demonstrated that debt financing increases value of a business due to interest tax shield. Following the same line of argument, we expect that access to bank credit increases business performance. As shown in Table 7 (appendix B), bank credit increases performance in the countries except Lesotho where the effect is not significant. Size is believed to increase performance through economies of scale that helps reduce production cost. In fact, bigger may not always be good because it may place strain on management and hence may lead to inefficiency. Our result shows that size increases performance in Malawi, Mozambique and Zimbabwe while it decreases it in Lesotho and Zambia.

Businesses accumulate experience over time and as a result an increase in business age may be expected to increase performance. The result of our empirical analysis shows that age of the business increases performance in Malawi, Mozambique and Zimbabwe but the increase in performance is only up to a certain age beyond which it starts declining. Performance can also be affected by marketing effort where increased marketing effort increases performance. We differentiated between businesses that advertise aggressively and those that do not. Our result shows that while advertisement increases performance in Malawi, Zambia, and Zimbabwe it decreases performance in Lesotho and Mozambique. Adverse effects of advertisement on performance in Lesotho and Mozambique might be due to the cost of advertisement outweighing its benefits. Having a business partner increases performance only in Malawi and Zimbabwe.

Businesses often make credit sales to boost sales and hence realise increased profit. In fact, profitability of credit sales depends on quality of credit customers and efficiency of collection policy. Our result shows that sales on credit increases business performance in Lesotho, Mozambique and Zimbabwe while it does not have any effect on performance in Malawi and Zambia. The role of business support is evident from its positive effect on performance in Lesotho, Zambia and Zimbabwe. Performance is also partly determined by location as those in urban areas perform better than rural-based small businesses.

We also noted that business performance is determined by personal characteristics of the owner. Ownership of multiple businesses by a single person can have either positive or negative effect on performance. It can increase performance when a good experience gained from one business is applied in others. However, it can also lead to diminished

performance as the entrepreneur's attention is divided among different businesses leading to inefficient management. Our result shows that multiple business ownership can boost performance in Zambia and Zimbabwe while it decreases performance in the rest of the countries.

Performance can also be affected based on whether a business is the only source of income. Intuitively, those for whom the business is the only source of income may exert extra effort to ensure the business performs well. This was confirmed in Malawi, Mozambique and Zimbabwe. Performance difference across gender groups is clear from our result that suggests that male owned businesses perform better than female owned ones except in Zambia where female owned businesses perform better. Education is strongly related to performance except in Lesotho where it does not have significant effect on performance. Entrepreneurial motive is the other important factor explaining performance difference among small business. Those that started their business with entrepreneurial motive fare well in Malawi and Zambia. We also observed effect of hours spent in business on performance. While increase in hours spent in the business increases performance in Malawi and Zimbabwe it decreases it in Lesotho and Mozambique.

Analysis of the effect of bank credit on performance across sectoral categories shows that bank credit increases performance for small businesses in the agricultural and wholesale sectors while it decreases performance of small businesses in the manufacturing and service sectors. Co-ownership of a business positively affects performance which might be due to synergy from pooling managerial experience to run a small business efficiently. From owner related factors, owning more than one business is related to lower performance across all the sectors which might be due to divided attention and inability of the owner to efficiently run a business.

The role of informal credit

Inability of SMEs to access finance from a formal credit market forces them to resort to informal finance. It is therefore interesting to understand whether there is any perceptible differences on the impact of formal versus informal finance on firm size. Earlier studies by Steel et al. (1997) reported the vitality of informal finance as an alternative route to SME access to credit. Recent studies also show that informal finance can be used as a remedy to the information asymmetry problem faced by SMEs and that it can also enhance efficiency of the credit market (Lin & Sun, 2006). However, despite its wider use among SMEs, it has been reported to have no robust impact on firm performance as much as formal finance. This is according to the findings of World Bank researchers Ayyagari et al. (2010) who reported that despite extensive use of informal finance by SMEs in China, those that use formal finance rather than informal finance exhibited faster growth. This could be explained by two reasons. Firstly, informal loans are small and hence they are mostly used

for financing operations (working capital) rather than growth (expansion) (Fanta, 2012). Secondly, as reported by Bolnick (1992) and many others, informal lenders charge unreasonably high interest rate that erodes profit of small firms.

The result of our econometric analysis shows that informal finance negatively affects performance in Malawi, Mozambique, Zambia and Zimbabwe. In Lesotho, access to informal finance is related to increased business performance. The rest of the variables maintain the same sign as reported in the previous sub section.

4. Conclusions

This paper reported the determinants of small business access to credit (both formal and informal) in the SDAC region using FinScope survey data. It also reported the link between access to credit and performance and the following conclusions were drawn.

Majority of the MSMEs are micro-enterprises whose economic contribution is limited: A large proportion of MSMEs in the 5 countries of the SADC region are micro-enterprises whose economic contribution is limited.

A good number of small business owners start their businesses with entrepreneurial motive: A reasonable proportion of small business owners start their business driven by entrepreneurial motive. This provides opportunity to governments to provide business support with the aim of helping small firms grow to contribute more to the economic development.

Most small businesses owners use own capital to finance start-ups: Most small business owner's finance start-ups using their own savings and as a result fail to grow due to a low capital base.

Small business participation in the manufacturing sector is marginal: Despite vitality of the manufacturing sector in transforming agriculture-led economies into industrial economies, only a small percentage of small businesses participate in this sector of the economy.

Only a small proportion of small businesses supply to the public sector: Government support to small businesses is critical and one way small businesses can be accorded assistance is by awarding public sector contracts. However, small business provision of goods and services to the government is marginal.

Lack of access to finance is the primary obstacle to start-up and growth: For a large proportion of small businesses, lack of access to finance is a serious obstacle to start-up and growth.

5. Implications for policy

The following policy implications have been drawn from the above conclusions

1. **Create conducive business environment for MSMEs to thrive:** Development of a vibrant MSME sector requires creating a business environment that encourages small businesses to thrive. This includes, among others, provision of business support, awarding government contracts, ensuring small businesses have access to credit both at start-up and growth stages.
2. **Business support programs that target small business owners with entrepreneurial motive is likely to be effective:** A good number of small business owners start their businesses with entrepreneurial motive and this provides opportunity for governmental agencies to target this group in providing business support.
3. **Inventing various financing schemes for start-ups will help small firms to start operation with adequate capital:** Most small business owners use their own saving to start-up business, and this limits their operation and often leads to failure. Start-up financing techniques such as venture capital or government guarantee schemes are likely to alleviate financial constraints that small business encounter at start-up.
4. **Encourage small businesses to participate in the manufacturing sector by providing incentives:** Governments need to provide different incentives to small businesses to encourage them to participate in the manufacturing sector. The incentives can be in the form of provision of training on successfully starting up and running small businesses in each industrial sub-sector or the provision of place for operation.
5. **Increasing small business supply to the public sector:** Lack of market is among the critical challenges small businesses face, and this can be curbed by providing government contracts to small businesses. This can be accomplished by setting up a consortium of small businesses with the capacity to provide goods and services to the public sector.

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Appendix A

(1) Determinants of access to credit: *Logistic regression analysis*

We used two models where the first model identifies determinants of access to bank credit while the second model identifies factors affecting access to informal credit. The dependent variable in each model is binary calling for a binary logistic regression model in which the probability of the dependent variable is described by the following function:

$$\pi_i = \frac{e^{z_i}}{1+e^{z_i}} \text{ or } z_i = \log\left(\frac{\pi_i}{1-\pi_i}\right) \quad \text{.....(1)}$$

Where

π_i is the probability the i^{th} person has a certain characteristic (i.e, probability of accessing bank credit or informal credit)

z_i is the value of the unobserved variable for the i^{th} person.

The logistic regression model assumes that z is linearly related to the predictors

$$z_i = b_0 + b_1 x_{i1} + b_2 x_{i2} + \ldots + b_p x_{ip} \quad \text{.....(2)}$$

Where

x_{ij} is the j^{th} predictor for the i^{th} person that include credit literacy, number of employees, owner's age,education, gender, business co-owned, collateral, entrepreneur, credit sales, turnover, keep books, business support, and urban.

b_j is the j^{th} coefficient

p is the number of predictors

The dependent variable in both models is dichotomous taking the values 1 or 0 otherwise. In the first model, the dependent variable is bank credit and the value 1 is assigned to those who have accessed bank credit and 0 otherwise. In the second model the dependent variable is informal credit and the value 1 is assigned to those who have accessed bank credit and 0 otherwise.

(2) Access to credit and business performance: Ordinary least square (OLS)

The link between access to credit (bank credit and informal credit) and business performance is determined using Ordinary Least Square (OLS) estimation technique. The following model is estimated:

$$Y_i = b_0 + b_1 x_{i1} + b_2 x_{i2} + \ldots + b_p x_{ip} \quad \ldots\ldots(3)$$

Where Y_i is business performance measured as annual turnover. The independent variables include bank credit, informal credit, Credit literacy, Number of business owned, Employees, Owners age, Age Square, Full-time, Business only source of income, Age of business, Business age square, advertise aggressively, Education, Gender, Business co-owned, Own collateraliseable assets, Entrepreneur, Credit sales, keep books, Hours spent, Support, and Urban.

Appendix B

Table 4: Definition of variables and descriptive statistics

Variable name	Description	Min	Max	Aggr. mean	Lesotho	Malawi	Mozambique	Zambia	Zimbabwe
Number of businesses	Number of businesses owned by the same owner	1	6	1.2	1.1	1.3	1.08	1.17	1.26
Employees	Number of full-time employees including the owner	1	76	1.5	1.4	1.32	1.11	1.51	2.06
Owners age	Age of the owner	16	93	39.3	56.3	37.34	36.05	42.62	40.34
Age of business	Age of the business measured in terms of years since establishment	1	127	12.9	8.6	13.13	8.78	19.11	11.02
Turnover	Annual turnover in USD*	-	-	-	281	967	362	4451	9,002
Urban	Business is located in urban areas (1=urban)	0	1	0.2	0.51	0.15	0.13	0.19	0.34
Education	Owner's highest level of education(1=No schooling, 4=post-secondary schooling)	1	4	2.3	2.7	2.12	1.86	2.52	2.73
Gender	Gender of the owner (1=Male, 0= Female)	0	1	0.5	0.41	0.54	0.4	0.67	0.47
Full-time	Owner runs the business on a full-time basis(1=Yes)	0	1	0.6	0.35	0.35	0.49	0.79	0.5
Hours spent	Number of daily hours the owner spends on his business (1=less than one hour, 4=more than 8 hours)	1	4	3.2	3.0	3.14	3.25	-	3.09
Business only source of income	Business is the only source of income for the owner (1=Yes)	0	1	0.5	0.7	0.54	0.84	0.21	0.48
Business co-owned	Business is co-owned with others(1=Yes)	0	1	0.1	-	0.14	0.01	0.12	0.11
Collateraliseable assets	Owner possesses assets that can be pledged as a collateral (1=Yes)	0	1	0.6	0.7	0.44	0.84	0.44	0.51
Desperate	Started business because would have been jobless otherwise(1=Yes)	0	1	0.16	0.20	0.51	0.23	0.07	0.08
Add income	Started business to add income to income generated from other sources(1=Yes)	0	1	0.48	0.24	0.11	0.44	0.76	0.27
Entrepreneur	Started business to test a new business idea or to use once own potential (1=Yes)	0	1	0.36	0.55	0.38	0.33	0.17	0.65

Variable name	Description	Min	Max	Aggr. mean	Lesotho	Malawi	Mozambique	Zambia	Zimbabwe
Advertise	Advertise business using such media as Radio, TV, telephone etc. (1=Yes)	0	1	0.1	0.1	0.04	0.11	-	0.15
Credit	Business sales goods/services to customers on credit (1=Yes)	0	1	0.4	0.7	0.55	0.31	0.2	0.65
Keep books	Keep up to date financial accounts for the business (1=Yes)	0	1	0.3	0.4	0.34	0.18	0.27	0.52
Support	Owner received business support from the government in the form of training(1=Yes)	0	1	0.1	0.1	0.09	0.02	0.1	0.09
Bank credit	Accessed bank credit (1=Yes)	0	1	0.0	0.0	0.02	0	0	0.02
Other- formal credit	Accessed other formal credit (1=Yes)	0	1	0.0	-	0.09	0	0	0.02
Informal credit	Accessed informal credit (1=Yes)	0	1	0.1	0.1	0.12	0.03	0.01	0.11

*USD is used for comparative purpose. We used local currency (except in Zimbabwe) for running the econometric model in each country.

Table 5: Determinants of access to credit (Bank credit) by country.

	Lesotho	Malawi	Zambia	Zimbabwe
Owner related factors				
Credit literacy	21.01	2.122***	10.491	2.893***
Entrepreneur	1.634***	0.341***	4.012***	0.120***
Owners age	0.566***	-0.011**	-1.428***	0.181***
Age square	-0.005***	0.001***	0.016***	-0.002***
Education	1.815***	0.166***	3.690***	1.218***
Gender	-2.542***	0.279***	17.425	0.474***
Business related factors				
Employees	-0.163***	0.011***	0.144	0.066***
Age of business	0.019	0.059***	0.538***	-0.128***
Business age square	0.001**	-	-.008***	0.003***
Business co-owned	3.852***	-0.216***	2.682***	-0.057***
Collateral	1.976***	0.322***	1.415***	0.032***
Credit sales	-3.012***	0.164***	3.382***	-0.489***
Turnover	0.00	0.00	0.00	0.00
Keep books	1.589***	0.262***	0.342	0.738***
Business support	0.903	1.338***	23.828	1.260***
Urban	0.179***	2.176***	4.458***	0.763***
-2 Log likelihood	2001.289	61939.78	2250.339	279386.713
Nagelkerke R Square	0.836	0.303	0.895	0.421

Note: **** significant at 1% level, ** significant at 5% level.*

Table 5: Determinants of access to credit (Bank credit) by sector.

	Agriculture	Wholesale	Manufacturing	Service
Owner related factors				
Credit literacy	3.199***	2.352***	5.592***	3.146***
Entrepreneur	0.114***	0.039***	-16.526	0.015***
Owners age	0.113***	0.176***	0.047***	-0.008***
Age square	-	-0.002***	-0.001***	-
Education	0.608***	0.227***	-0.645***	-0.42***
Gender	0.454***	0.004	0.371***	0.772***
Business related factors				
Employees	-0.058***	-0.112***	-0.21***	-0.148***
Age of business	0.001***	0.001***	0.004***	0.002***
Business age square	-1.272***	0.594***	0.93***	0.556***
Business co-owned	-0.383***	-0.757***	-0.217***	-0.186***
Collateral	0.694***	0.767***	1.646***	1.138***
Credit sales	-0.367***	0.143***	0.902***	-0.338***
Keep books	0.795***	0.655***	-1.122***	0.704***
Business support	1.527***	-0.017	1.067***	1.969***
Urban	0.754***	0.787	-0.094**	0.646***
-2 Log likelihood	120314.54	345352.234	40038.749	60770.216

	Agriculture	Wholesale	Manufacturing	Service
Nagelkerke R Square	0.439	0.259	0.561	0.417

Note: *** *significant at 1% level,** significant at 5% level..*

Table 6: Determinants of access to credit (informal credit) by country.

	Lesotho	Malawi	Mozambique	Zambia	Zimbabwe
Owner related factors					
Credit literacy	10.494***	2.093***	7.413***	-0.126***	4.78***
Entrepreneur	-1.296***	0.309***	-1.085***	2.486***	-0.16***
Owners age	-0.043***	-0.082***	-0.178***	1.108***	-0.04***
Age square	0.00	0.001***	0.002***	-0.014***	0.000***
Education	-0.773***	-0.295***	0.246***	-1.26***	-0.387***
Gender	1.432***	-0.205***	-0.781***	1.363***	0.313***
Business related factors					
Employees	0.016	-0.089***	-0.006	-1.049***	0.045***
Age of business	0.034*	0.039***	0.102***	0.074***	0.102***
Business age square	-0.003***	-0.001***	-0.006***	-0.001***	-0.002***
Business co-owned	-2.396***	0.536***	-14.779	3.207***	0.233***
Collateral	-0.972***	-0.382***	0.33***	-0.896***	0.072***
Credit sales	1.805***	0.023**	-0.132***	-2.619***	-0.203***
Turnover	0.00	0.00	0.00	0.00	0.00
Keep books	-1.048***	-0.259***	-0.878***	-2.154***	-0.04***
Business support	0.206	-1.746***	-1.314***	4.134***	-0.391***
Urban	0.503***	-0.151***	-0.163***	-0.464***	-0.103***
-2 Log likelihood	3529.94	235969.98	274130.29	92812.70	695039.93
Nagelkerke R Square	0.835	0.178	0.738	0.391	0.565

Note: *** *significant at 1% level,** significant at 5% level, * significant at 1% level.*

Table 7: Determinants of access to credit (informal credit) by sector.

	Agriculture	Wholesale	Manufacturing	Service
Owner related factors				
Credit literacy	3.428***	4.401***	5.36***	5.189***
Entrepreneur	0.11***	0.019***	0.083***	-0.029***
Owners age	0.025***	-0.036***	-0.021***	0.592***
Age square	-0.001***	-	-	-0.008***
Education	0.082***	-0.505***	0.786***	-0.038***
Gender	0.21***	-0.719***	-0.282***	-0.074***
Business related factors				
Employees	0.004***	-0.11***	0.022***	0.128***
Age of business	-0.001***	-	-	-0.01***
Business age square	0.546***	-0.282***	1.381***	1.275***
Business co-owned	0.42***	-0.272***	-0.492***	-0.72***
Collateral	0.459***	.322***	-0.429***	-0.139***
Credit sales	0.265***	1.251***	1.724***	0.567***

	Agriculture	Wholesale	Manufacturing	Service
Keep books	0.68***	0.983***	0.844***	0.346***
Business support	0.277	0.324***	-3.963***	-2.084***
Urban	-0.687***	1.072***	-0.076***	0.523***
-2 Log likelihood	703081.664	882653.003	99462.221	90154.864
Nagelkerke R Square	0.367	0.451	0.612	0.618

Note: **** significant at 1% level.*

Table 8: Credit access and performance (the role of bank credit) by country

	Lesotho	Malawi	Mozambique	Zambia	Zimbabwe
Business related factors					
Bank Credit	2,217.14	2310412.79***	39345.33***	1105614.91***	103183.74***
Employees	-69.74***	1984773.34***	6738.03***	-12226.51***	3345.21***
Age of business	9.07	11392.01*	6987.03***	-95983.01***	790.79***
Business age square	-0.09	-119.67	-170.08***	1076.59***	-20.00***
Advertise	-800.39***	4143376.34***	-40794.48***	6455891.64***	6380.88***
Business co-owned	230.73	2535425.59***	18115.03	1273562.53	30272.86***
Credit sales	355.57***	-148054.27***	16734.89***	-180201.17***	3106.66***
Support	1238.51***	46768.94	17127.99	192102.99***	757.96***
Urban	872.63***	2281726.03***	30687.82***	3627190.99***	11834.01
Owner related factors					
Number of business owned	-143.32*	-598615.55***	-5229.59***	1214402.26***	7496.06***
Business only source of income	-274.44***	122305.01**	12293.42***	-8514498.28***	6358.33***
Gender	-154.00**	-20404.19	-19771.24***	335262.49***	-487.98***
Owners age	23.52***	-10835.28***	-7770.40***	-92669.26***	-105.83***
Age square	-0.023***	328.37**	78.54***	912.62***	2.40***
Education	23.18	155233.29***	74585.84***	412476.46***	4886.40***
Entrepreneur	1.31	664476.85***	35563.22	1069469.80***	1469.19
Hours spent	-634.67***	254476.88***	-52601.39***	-	5212.97***
F- stat(sig)	42.80***	3177***	1503***	9968***	14039***
Adjusted R^2	0.133	0.161	0.092	0.119	0.143

Note: **** significant at 1% level, ** significant at 5% level, * significant at 1% level.*

Table 9: Credit access and performance (the role of bank credit) by sector

	Agriculture	Wholesale	Manufacturing	Service
Business related factors				
Bank Credit	0.096***	0.037***	-0.039***	-0.014***
Employees	0.227***	0.048***	0.011***	0.209***
Age of business	-0.055***	0.019***	0.109***	0.014***
Business age square	0.107***	-0.004***	-0.05***	-0.019***
Advertise	.042***	-.014***	-.024***	0.047***
Business co-owned	0.046***	0.03***	0.064***	0.012***
Credit sales	0.026***	-0.018***	0.061***	0.013***

	Agriculture	Wholesale	Manufacturing	Service
Support	0.005***	0.027***	0.126***	-0.015***
Urban	0.027***	0.006***	-0.007***	0.021***
Owner related factors				
Number of business owned	-0.013***	-0.004***	-0.021***	-0.008***
Business only source of income	0.01***	-0.001	0.015***	0.02***
Gender	-0.027***	-0.003***	0.045***	-0.015***
Owners age	-0.033***	-0.016***	-0.025***	0.05***
Age square	0.016***	0.009***	0.02***	-0.043***
Education	-0.03***	0.024***	-0.046***	-0.019***
Entrepreneur	-.002***	0.001**	-0.042***	0.013***
Hours spent	-0.001**	-0.014***	-0.002***	0.008***
F- stat(sig)	8401***	1550***	807***	1284***
Adjusted R^2	0.075	0.008	0.03	0.049

Note: *** *significant at 1% level,** significant at 5% level.*

Table 10: Credit access and performance (the role of informal credit) by country

	Lesotho	Malawi	Mozambique	Zambia	Zimbabwe
Business related factors					
Informal credit	2,427.41***	-185,223.48**	-7,282.82**	-90,531.74*	-27,954.41***
Employees	-67.19***	1,998,633.08***	6,732.54***	-11,417.432**	3,858.39***
Age of business	11.14*	13,212.068**	7,016.07***	-95,599.244	687.73***
Business age square	-0.13	-69.49	-171.09***	1,071.94***	-17.71***
Advertise	-834.09***	4,084,347.65***	-40,867.67***	6,434,897.72***	6,070.13***
Business co-owned	244.41	2,542,878.74***	-17,882.52***	-1,274,786.75***	33457.84***
Credit sales	353.54***	-146,185.85***	16,496.09***	-174,604.82***	1,827.41***
Keep books	-25.99	305,004.68***	-48,059.56***	1,181,642.39***	5,132.84***
Support	1,233.85***	129,808.01	-18,884.20***	193,073.71***	6,114.93***
Urban	856.63***	2,418,321.11***	30,538.67***	3,637,560.17***	13,698.31***
Owner related factors					
Number of business owned	-155.59*	-571,294.11***	-5,329.42***	1,213,559.34***	5,957.84***
Business only source of income	-278.81***	165,401.62***	12,356.99***	-8,509,576.30***	6,237.80***
Education	27.85	149,264.44***	74,470.56***	411,415.09***	7,044.76***
Gender	-174.20***	-13,877.73	-19,797.62***	337,117.59***	777.44***
Owners age	23.53***	-20,116.09*	-7,763.68***	-93,236.55***	33.68
Age square	-.023***	454.19***	78.49***	919.20***	1.14***
Entrepreneur	8.77	671,432.27***	35,362.39	1,076,365.82***	1,666.94
Hours spent	-626.16***	188,789.97***	-52,829.13***	-	5,391.65***
F stat(sig)	0.44***	3,166***	1,501***	9,968***	9,678***
R^2	0.136	0.16	0.092	0.119	0.103

Note: *** *significant at 1% level,** significant at 5% level, * significant at 1% level.*

Table 11: Credit access and performance (the role of informal credit) by sector

	Agriculture	Wholesale	Manufacturing	Service
Business related factors				
Informal Credit	-0.013***	-0.007***	0.083***	-0.013***
Employees	0.240***	0.051***	0.002***	0.208***
Age of business	-0.071***	0.020***	0.108***	0.016***
Business age square	0.131***	-0.005***	-0.046***	-0.021***
Advertise	0.045***	-0.015***	-0.035***	0.047***
Business co-owned	0.044***	0.034***	0.059***	0.011***
Credit sales	0.025***	-0.019***	0.053***	0.013***
Support	0.016***	0.028***	0.120***	-0.018***
Urban	0.031***	0.008***	-0.013***	0.020***
Owner related factors				
Number of business owned	-0.016***	-0.005***	-0.021***	-0.010***
Business only source of income	0.006***	-0.002***	0.011***	0.021***
Gender	-0.025***	-0.002***	0.044***	-0.016***
Owners age	-0.030***	-0.015***	-0.016***	0.049***
Age square	0.015***	0.008***	0.013***	-0.042***
Education	-0.022***	0.027***	-0.049***	-0.017***
Entrepreneur	-	0.002***	-0.050***	0.012***
Hours spent	-0.002***	-0.014***	-0.005***	0.009***
F- stat(sig)	7406***	1310***	937***	1284***
Adjusted R^2	0.067	0.007	0.035	0.049

Note: *** *significant at 1% level.*