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2025-01-24

Deposited version:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Murambire Júnior, B. J., Falcão, P. F. & Esperança, J. P. (2025). Small and medium-sized enterprise financing in the manufacturing industry: Demand-side determinants of bank credit access in Mozambique. *International Journal of Entrepreneurship and Small Business*. 54 (1), 48-82

Further information on publisher's website:

10.1504/IJESB.2022.10056674

Publisher's copyright statement:

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Small and Medium-sized Enterprise Financing in the Manufacturing Industry: demand-side determinants of bank credit access in Mozambique

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Abstract: This paper examines the demand-side factors that influence small and medium-sized enterprises' (SMEs) access to bank financing in the manufacturing industry in Mozambique. A mixed-methods sequential explanatory design was applied, starting with quantitative research on a sample of 347 SMEs followed by qualitative research on 30 SMEs. Managers' experience, firm size, gross profit, and equity were found to be the only statistically significant determinants of SMEs' access to bank credit. The most important themes identified by the qualitative research were risk tolerance, financial literacy, financial management skills, loan terms offered, service quality, lessons learned, cultural aspects, managers' beliefs, and internal aspects. This study fills a research gap by examining the demand-side factors that influence SMEs' access to bank financing in the manufacturing industry in developing economies. The results provide a deeper understanding of which determinants are crucial in order to ensure effective strategies and tools in developing countries. An important implication is that policymakers need to implement holistic approaches that prioritise demand-side factors.

Keywords: bank financing access; SMEs; small and medium-sized enterprises; manufacturing sector; demand-side factors; manager experience; Mozambique; developing economies; sequential explanatory design; logistic regression; thematic analysis.

Reference to this paper should be made as follows:

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1. Introduction

Although throughout their life cycle, small and medium-sized enterprises (SMEs) need to find appropriate sources of finance at different stages in their development, access to finance remains a major concern for most SMEs around the world, despite their valuable contribution to the economy (job creation, GDP, etc.) and society, in general. The Organisation for Economic Co-operation and Development (OECD) (2019) reports that SMEs and entrepreneurship are drivers of socioeconomic wellbeing. These firms represent 99% of all businesses, provide 60% of all employment and are responsible for between 50% and 60% of the added value in the areas surveyed by the OECD. SMEs are thus considered the key to ensuring inclusive and sustainable economic growth. The cited report also mentions that they are fundamental to economies and societies' ability to adapt successfully to major changes such as digitalisation, globalisation, aging populations, and environmental pressures (OECD, 2019). Fatoki and Van Aardt Smit (2011) argue that new SMEs can facilitate sustainable economic growth. Countries risk economic stagnation if they do not have a high rate of creation of sustainable SMEs. Wattanaputtipaisan (2003) also asserts that these companies are extremely important at a socioeconomic level even though their growth and competitiveness in developing nations is often restricted by limited access to formal financing, among other systemic and institutional problems. Difficulties in gaining access to finance have been described as one of these companies' greatest constraints in both developed and developing countries (Beck and Cull, 2014; Mensah, 2004; Mina et al., 2013). Elsaid, Mahmoud, and Chahir (2013), Gichuki et al. (2014), and Amadou (2016) found that SMEs' main obstacles in getting bank credit are loans' high cost, collateral requirements, unavailability of guarantors, the elevated cost of applying for credit, and short repayment periods. According to the European Investment Bank (2018), banks in sub-Saharan Africa considered the main obstacles to lending to SMEs, (i) lack of reliable collateral; (ii) default rate; (iii) management capacity; (iv) lack of information; and (v) costly monitoring and lack of credit reference bureau. According to the IFC, in 2016 there were about 40 million businesses in sub-Saharan Africa, yet four out of five did not have access to the financing they needed, and there is widespread recognition from world leaders about the contribution of SMEs to the economy and job creation. For the IFC, the three underlying problems were: (i) banks need to learn how to profitably serve the SME segment, (ii) the business environment has to improve in order to be conducive to development and access to credit by SMEs, and (iii) the capacity of SMEs has to be improved so that they are bankable¹. Additionally, the nature of relations between SMEs and banks has not been consistently researched (Hisrich, Petković, Ramadani, and Dana, 2016).

¹ IFC - Barriers to Finance Africa's SMEs - <https://www.youtube.com/watch?v=nGDXOjO-U7Y&t=73s>.

However, most earlier studies focusing on issues related to SMEs' finance tend to approach the problem from a supply perspective, so research from the demand side has been tentative and the literature from this perspective is quite limited (Alhassan and Sakara, 2014). Demand in this context is defined as these companies' intention to take out loans from commercial banks. Experts tend to understand SMEs' limited access to finance to be due essentially to banks' policies. However, Zavatta (2008) argues that financial institutions' behaviour is not the only reason that these firms cannot secure bank loans. Therefore, SMEs' decisions about finance are primarily shaped by demand-side factors. These companies are concerned about contractual terms and conditions, high interest rates, collateral requirements and in the long term their inability to repay loans (Olutunla and Obamuyi, 2008). SMEs also have inherent financial constraints especially because of their limited knowledge of management, little interest in using certain kinds of finance, and ineffective business practices (Fiestas and Sinha, 2011). Still on the demand side, few studies have been conducted to assess the impact of the capacity building programmes and projects that have been implemented. As a consequence, there is much speculation in the market about the demand-side determinants of SMEs' access to bank finance.

On the other hand, there is limited information on what SMEs think about the reasons for difficult access to finance. Additionally, while acknowledging that much is known about the characteristics and behaviour of SMEs, for many scholars this knowledge still remains imperfect, and many questions related to SME finance and development in developing countries remain unanswered (Paul, 2001); (Pandula, 2011); (Mutoko and Kapunda, 2017); (OCDE, 2018).

In Mozambique definitions of SMEs vary among different organisations and institutions, although the most commonly used criterion is the number of employees. According to the Decree n° 44/2011, of 21st September (Estatuto Geral das MPME), SMEs are classified in three categories, as a result of combination of two criteria, namely number of employees with the turnover, being: (i) Micro – 1 to 4 employees and up to 1,200,000 MT of turnover; (ii) Small – 5 to 49 employees and from 1,200,001 to 14,700,000 MT of turnover; and (iii) Medium – 50 to 100 employees and from 14,700,001 to 29,900,000 MT of turnover². In this classification turnover criterion is crucial. However, it should be noted that the National Institute of Statistics (INE) defines SMEs as enterprises with fewer than 100 employees. Although it is a subjective definition, which came before the IPEME definition, it has been argued that it appears to be more precise and is in line with some of the definitions in other countries as well as with the International Finance Corporation (IFC) matrix.

The financial system in Mozambique is underdeveloped, with a limited supply of financial services for SMEs, high interest rates, reflecting high risks to lending, as well as structural issues such as lack of credit information, limited use of movable assets as collateral, and limited bank competition. Banks' credit risk is also exacerbated by the legal uncertainty over property rights and lengthy proceedings to recover collateral. The capital market in the

² Exchange rate 1US\$ = 30 MT (in 2011) when the decree was approved.

country is still underdeveloped, with very few companies listed. There is a shortage of Private Equity and Venture Capital due to various legal and regulatory challenges, among others. In addition, Mozambique is a market with limited financing alternatives for SMEs, where crowdfunding solutions and other digital platforms are still at a very embryonic stage, with some challenges in terms of technological infrastructure and legislation. As a consequence, bank credit has been the main source of external financing for SMEs, but Mozambique's experience shows that granting loans is not enough (Dana, 1996).

SMEs financing has been a priority of the Government in Mozambique. Solutions that have already been implemented include isolated initiatives seeking to increase SMEs' capacity. These initiatives have encountered many obstacles in terms of sustainability. The initiatives include various banks' training programmes that seek, among other objectives, to increase the number of credit worthy companies that can use the predefined financial products on offer. They also include reducing the informational asymmetry between borrower and lender, and other challenges that impede access to financing by SMEs (Dana, 1996) (Murambire Jr., 2014). Financing SMEs is a nation-wide priority, so developing a better understanding of the problems that affect access to loans is imperative.

To the extent of the author's knowledge, there are a limited number of published studies that focus on demand-side aspects such as characteristics of managers, characteristics of SMEs, and financial management practices. Clearly, the motivation for this subject is intertwined with the importance of access to financing by SMEs, a subject of unquestionable importance and one that is in the interest of most countries.

As found in a recent study by Alharbi, Yahya, and Ramadani (2022), access to finance has a positive effect on SMEs performance. However, more serious is the fact that there is no similar study conducted in Mozambique. This is one of the main motivations to carry out this research, which in addition to being at the fore, may cover a gap in the literature on the determinants of the demand-side of the decision regarding the type of external financing to be used by SMEs. The question that needs to be answered is which demand-side factors determine SMEs' decisions to take out loans. The present research thus seeks to identify and understand the demand-side variables that affect SMEs' access to bank credit.

The following sections presents the literature review and research hypotheses, followed by the section on methods and materials. The fourth section has the results and discussion, and the last focuses on the conclusions, limitations, and future research.

2. Literature Review and Research Hypotheses

There is a problem when a project that would be financed internally if the resources were available does not obtain external financing simply because there is a difference between the expected internal rate of return of the project and the rate of return required by investors to

finance it (Stiltz and Weiss, 1981). Access to finance refers to the ability of individuals or firms to make use of financial services, including credit, deposits, payments, insurance, and other risk management services (Demirgüç-Kunt, Beck, and Honohan, 2008). It is important to distinguish access from the use of financial services, as there may be situations in which there is access to financial services but SMEs nevertheless decide not to make use of them (Demirgüç-Kunt et al., 2008).

There are several theories that seek to explain access to finance, such as the information asymmetry, transaction costs and trade-off, and pecking order theories. However, these theories pertain to the capital structure of firms, and assume that these firms aim to maximize profit. These theories do not take into account how decisions are made by SME managers/owners (Brettel, Breuer, Espel, and Abedin, 2011). Therefore, traditional theories of finance have proved insufficient to explain the financial decisions made by economic agents, i.e. the traditional approach to finance (rationality) tends to be complemented by behavioural aspects. Nowadays, behavioural finance emerges as a complement to traditional (rational) finance and joins areas of knowledge that have to do with psychology and sociology.

In recent years the literature has been showing that maximum profit is not always the determinant of managers/owners' capital structure behaviour, especially in emerging markets (Mac an Bhaird and Lucey, 2010) and (Mateev and Ivanov, 2011). As a consequence, the analysis of how SMEs make their financing decisions probably requires a greater focus on the intuitive way they make their decisions, while also taking into consideration the financial skills they have, where they exist. According to Lobão, "Behavioural finance is concerned with studying both how agents' decisions deviate from what is predicted by traditional finance and the consequences of the existence of agents who make their decisions in a way that is not fully rational" (Lobão, 2012, p. 10). This represents an approach to finance that relaxes the concept of complete rationality by considering the way individuals behave, resorting to psychology. Psychological factors influence the decisions of investors, moving them away from the path npredicted through the principles of complete rationality adopted by traditional finance.

Behavioural issues become crucially important when analysing the demand side. Understanding the reasons for poor access to demand-side finance requires an analysis of the relevant theoretical framework. The variables that influence the intentions of SME managers/owners to borrow are diverse. As indicated above, published studies that rigorously investigate the behavioural factors that influence managers' intentions to take bank loans are very scarce. To address this lack the present study will – in addition to examining the managers' characteristics, SMEs' characteristics, and financial management practices – seek to understand the behavioural issues that influence intentions, obviously associated with those variables.

To what extent do the explanations that underpin SMEs' access to finance go beyond questions of economic rationality? This question calls for a study Ajzen's theory as one of the determinants of SMEs' financing decision behaviour. Ajzen and Fishbein's (1969, 1980) theory of rational behaviour cited by Southey (2011) is based on the assumption that individuals

behave sensibly, take into account available information, and consider the implications of their actions. This evolved into the theory of planned behaviour. Unlike capital structure theories and models, it does not assess the intention of the SME owner-manager to access debt finance solely on the basis of profit maximisation. The Theory of Planned Behaviour model combines the financial and social factors that induce the SME manager-owner to take out a commercial bank loan, and better explain the problems of access to finance from the demand-side perspective.

Brettel et al. (2011) studied SME financing issues and confirmed and deepened the applicability of the Theory of Planned Behaviour to SME financing issues. In their study the issue of attitude and social norms were emphasised as being the most important ones in a universe of various factors that determine the financial behaviour of SMEs.

Tolba, Seoudi, and Fahmy (2014) studied the behavioural factors affecting the intentions of managers/owners of SMEs in Egypt to take commercial bank loans from the consumer perspective. Based on the theory of planned behaviour they designed a model which argued that SME managers/owners' intentions to obtain bank credit are determined by knowledge, prior experience, perceptions, attitude, subjective norms, and perceived behavioural control.

Figure 1 presents the relationship between demand-side variables and access to bank credit.

Insert Figure 1 near here

Additional details on the demand-side factors are presented below.

2.1 Managers and/or Owners' Characteristics and Access to Finance

Companies' human capital consists of their human resources' knowledge, skills, abilities, competencies, attitudes, talents, and experience. The literature reveals that few studies have focused on this topic and that the results are contradictory regarding how much managers' features such as education, age, gender, and experience can influence access to bank loans. In recent years academics have become more interested in investigating how managers and/or owners' entrepreneurial traits influence their access to external financing. Mac an Bhaird (2010) observes that SMEs' finance was largely ignored for many years in academic research, even though, in the last few decades, many investigations have tested empirical theories in the field of finance.

Zabri et al. (2017) assert that no established theories exist regarding the direction of the relationships between managers' characteristics and their finance choices, as researchers have been unable to determine whether this relationship's sign is positive or negative. Norton (1991) and Low and Mazzarol (2006) suggest that manager-owners' personal characteristics play a

substantial role in determining their external financing preferences. These characteristics can also help predict companies' capital structure (Cassar, 2004). Mac an Bhaird (2010) provides corroboration of the latter assertion, describing two approaches to examining owners' personal characteristics (i.e. age, gender, ethnicity, education, and experience) and business-related preferences, objectives, and motivations.

Nguyen and Luu (2013) analysed demographic characteristics (age, ethnicity, level of schooling, and gender) and concluded that except for education, these variables do not significantly determine SMEs' source of finance for new investments. Regarding education, the authors further confirmed that – all other factors remaining constant – managers with less education and/or limited competencies use a smaller proportion of external financing sources compared to managers with more education. In contrast, the latter use a higher proportion of other finance sources. Nguyen and Luu (2013) concluded that business managers' characteristics such as age, ethnicity, and professional experience have a significant impact on formal loan procurement. In addition, their results indicate that Vietnamese companies with older managers with more years of experience tend to have greater access to formal finance sources than do other managers.

In a later study Nguyen et al. (2015) found evidence that owners' education and gender are the most important determinant factors of access to credit, followed by the type of relationships companies establish with banks and clients. In other words, the quality of firms' relationships ultimately play a crucial role in terms of finance. According to Bates (1990), managers and/or owners' level of education determines their decisions about their SMEs or start-ups' capital structure. This finding contradicts Nguyen and Luu's (2013) results but is in line with Nguyen et al.'s (2015) findings.

Zarook et al. (2013) analysed the effect of managers and/or owners' characteristics on access to finance in Libya and concluded that these traits – especially management experience and education – have a significant positive impact on access to external financing. In contrast, business plans and political connections have no significant effect on access to finance. Zarook et al.'s (2013) study also showed that owners with a university degree use more external funds than private funds.

Harvie et al. (2013) examined SMEs' main sources of external funding in Asian economies in order to identify the factors that contribute to applicants' reasoning regarding access to credit. Their study focused on SMEs and their managers' and/or owners' characteristics, as well as company performance. Harvie et al.'s (2013) empirical research confirmed that the characteristics that stand out most clearly in SMEs that successfully gain access to external financing are size, country's stage of development, equity, the presence of collateral, business plan, financial statements, and cash flows.

More recently, Campanella and Serino (2019) confirmed that in Italy managers and/or owners' personal characteristics influence access to bank credit. The authors analysed the impact of variables such as loan applicants' gender, level of education, age, and ethnicity on

the probability of obtaining business loans, finding that SMEs' access to finance depends on specific individuals' ability to apply for bank loans successfully.

2.1.1 Gender

The question of gender in SME contexts has been extensively studied. However, no consensus exists about which gender – or to what degree either gender – influences access to finance (e.g., Coleman, 2000; Bellucci et al., 2010; Largay and Qiu, 2011; Nguyen and Luu, 2013;). Nafziger's (2020) research highlights the legal disadvantages and policy and cultural barriers that women face in many developing nations, which ultimately has a negative impact on economic growth and development. Additionally, the gender gap in access to finance might result from a limited presence of foreign-owned banks; larger share of state-owned banks; poorer availability of credit information through public and private credit registries; and gaps between women and men in educational attainment (Morsy, 2020). Thuku (2017) focused on entrepreneurial traits and access to loans, finding that banks prefer women to men when granting loans and, concurrently, that using networks does not influence access to credit.

Moro et al. (2017) also concentrated on analysing gender's effects, showing that a lack of credit can be related not only to loan applications being rejected but also to companies not applying for loans because they expect to be turned away. Campanella and Serino (2019) further confirmed that the managers' gender influences access to bank credit. Overall, most studies of gender and entrepreneurship have revealed that women have greater difficulty obtaining financing than men do. Given the above findings, the present research's first hypothesis is as follows:

Hypothesis 1: SMEs with male managers and/or owners have greater access to bank financing.

2.1.2 Age

The literature reveals a lack of consensus on the impact of managers' and/or owners' age on access to external financing. Cassar (2004) argues that age is a fundamental determinant of entrepreneurs' attitude toward risk, which affects access to external funding. Younger entrepreneurs are more willing to take greater risks, while older individuals are more risk averse. Cassar (2004) also asserts that the latter entrepreneurs have already established firms and need a minimum of resources to maintain and finance their business's expansion. Younger entrepreneurs are in many cases entering into new markets, and still have not reached their business goals.

This finding is in alignment with Xiao's (2007) results, which confirm that a difference exists between young and older entrepreneurs' risk profiles. Since age is considered a determinant of risk preferences, scholars often tend to consider younger individuals to be less averse to risk and thus to be more interested in setting up loans from external sources (Vos et al., 2007). However, Nguyen and Luu (2013) concluded that age is not a significant determinant of SMEs' source of finance for new investments.

In contrast, Ogubazghi and Muturi (2014) found further evidence that age significantly influences individuals' ability to secure loans. Campanella and Serino (2019) similarly confirmed that managers' and/or owners' characteristics (i.e. their age) affect their access to bank credit. This result is related to managers' risk profile, which can be associated with their age. The present study's next hypothesis is thus the following:

Hypothesis 2: The older that managers and/or owners are, the better their access becomes to bank financing.

2.1.3 Experience

Pandulas' (2011) research highlighted the positive relationship between managers' past experience and improved access to external financing, but the link between years of experience and access to external loans is not statistically significant. Bartlett and Bukvič (2003) observe that managers with limited experience are unattractive to providers of financial services because the latter are uncomfortable with approving loans for less experienced managers. According to Khalid and Kalsom (2014), SME owners' business experience does not have a significant relationship with their company's tendency to apply for bank loans.

The findings thus vary by context. For instance, a related study was conducted in Mozambique, which sought to determine if entrepreneurs are born or created. The research's results provide strong evidence that entrepreneurship arises naturally in this country, functioning as a genuine motivation for entrepreneurs' business activities (Sawaya, 2018). Given the above findings, the current study's third hypothesis is as follows:

Hypotheses 3: The more years of experience that managers and/or owners have, the better their access to bank financing becomes.

2.1.4 Education

No consensus appears in the literature on how much managers' education influences their access to loans. For example, Han et al. (2009) assert that entrepreneurs with higher education degrees are likely to experience more financial restrictions than entrepreneurs with a basic formal education. The explanation given for this is that highly educated individuals normally own and manage businesses that are relatively larger and more likely to be affected by financial restrictions. In a related study with a different focus, Thuku (2017) examined entrepreneurs' characteristics and access to credit, confirming that education and/or training has no influence on access to credit.

However, Nguyen and Luu's (2013) findings include that education is a significant determinant of sources of finance for SMEs' new investments. Other studies' results are aligned with these (e.g. Zarook et al., 2013; Tolba et al., 2014; Zabri and Lean, 2014; Campanella and Serino, 2019). Based on the results of prior research the present study includes a fourth hypothesis:

Hypothesis 4: The higher is the managers' and/or owners' level of education, the better is their access to bank financing.

2.2 SMEs' Characteristics and Access to Financing

Various indicators can be used to determine companies' characteristics such as size (i.e. business volume, number of employees, and asset value), capital distribution, shareholder structure, age or year started, and location. Researchers continue to argue over which firm characteristics influence access to financing and how strong their influence is. For example, Luzio (2015) focused on SMEs' characteristics and concluded that size, age, level of debt, location, independence, and asset structure are the most influential variables regarding the availability of finance. Mutoko and Kapunda (2017), in turn, conducted a study in Botswana, finding that the factors that influence SMEs' decisions to take out loans have to do with firms' and entrepreneurs' characteristics.

Ontañón and Pérez (2014) assert that the main barriers to increasing credit limits for SMEs is a lack of information, failures in creditor protection, and the changes and disruptions commercial banks have experienced in the last three decades. According to Thuku (2017), company size and location affect access to credit, and older firms have more experience in submitting loan applications than younger firms do. Various authors have studied the differences between SMEs and large companies with regard to access to loans. SMEs are described as the "missing middle" because banks perceive that the amounts loaned to SMEs are too small to compensate for transaction and processing costs (Shinozaki, 2013; (Bengo and Arena, 2019).

2.2.1 Age

Firms' level of experience and length of time in the market can influence their network of clients and suppliers. Botello (2015) reports that companies' degree of consolidation and level of experience in their market indicate to loan providers that these firms are stable and can generate positive cash flows based on their clients and market structure. Most studies have thus confirmed a positive relationship between company age and access to financing.

Kasseeah and Thoplan (2012) and Guariglia (2008) concluded that firms' age influences their ability to obtain financing. Ghimire and Abo (2013) also detected a significant relationship between firms' age and the way their loan applications are processed. In contrast to previous researchers, Shaista (2019) more recently confirmed that SMEs' age does not significantly affect their decisions to apply for bank loans. Farinha and Félix (2014) also found that younger companies have a higher level of default risk. The present study thus formulates the following hypothesis:

Hypothesis 5: The older that SMEs are, the better their access to bank financing becomes.

2.2.2 Size: Number of Employees

SMEs share some characteristics such as size, which is usually represented by the number of employees or sales volume. For example, Kasseeah and Thoplan (2012) report that size influences firms' ability to take out loans. Ghimire and Abo (2013) also found a significant relationship between company size and the way their bank credit applications are processed. Kira and He (2012) similarly concluded that size is one of the factors that affects access to financing, and Khalid and Kalsom's (2014) results show that size has a negative relationship with firms' tendency to apply for bank loans.

Botello (2015) asserts that companies with a large production volume and high capitalisation rate can attract capital flows because they more easily produce the necessary resources to repay loans. These firms can also provide many guarantees based on their capital and infrastructure, as well as relatively transparent financial statements. Sales and number of employees have been used as indicators of company size and have been treated as evidence of a strong positive relationship with firms' ability to access credit.

Hainz and Nabokin (2013) report that SMEs tend to rely more on internal financing or to apply for fewer bank loans. Finally, Shaista (2019) confirmed that SMEs' size has a positive impact on their decision to apply for debt financing. Based on the above findings, the current research includes the following hypothesis:

Hypothesis 6: The larger that SMEs are, the better their access to bank financing becomes.

2.2.3 Gross Profit

Olutunla and Obamuyi (2008) found that SMEs' profitability and bank loans are interdependent. That is, a significant relationship exists between profitability and business size, as well as between profitability and interest rates. Given that financial information's credibility depends on the system of organised accounting used, Thuku (2017) observes that the managers surveyed agreed that financial characteristics and access to credit are affected by organised accounting, account audits, and available collateral. Financial institutions are extremely reluctant to provide long-term financing to SMEs, and bank credit does not always have a positive effect on their performance or growth. Shaista's (2019) study focused on factors that influence SMEs' decisions to apply for bank loans and found that financial performance has a positive impact on SMEs' decisions in favour of debt financing. Given the above results, the present study adds the following hypothesis:

Hypothesis 7: The larger the SME's gross profit is, the better is the access to bank financing.

2.2.4 Equity

Firms' equity is the amount invested by partners or stockholders in their company. Xiao (2007) developed a conceptual model of the factors that influence financial risk tolerance after reviewing 125 studies published between 1960 and 2006. The author found that large amounts

of equity are associated with higher risk tolerance, and these funds are thus linked to a greater tendency to take out loans. Xiao (2007) reports that the literature provides strong support for this finding, including between 80 and 100% of the studies reviewed.

SMEs' survival depends on good financial management through finding a balance in accounting practices that allows these firms to plan and expand their business activities. This aspect is one of the main features that banks evaluate when processing loan applications. Khalid and Kalsom (2014) verified that a lack of guarantees has a negative relationship with companies' tendency to apply for bank loans (Benkraiem, 2016). The above findings were incorporated into the current research's next hypothesis:

Hypothesis 8: The more equity SMEs have, the better their access to bank financing becomes.

2.3 Companies' Financial Management Practices and Access to Financing

Financial management practices are understood here as the combination of procedures adopted by SMEs that can influence their access to financing. Kwaning Mbroh (2015) suggests that one of the greatest challenges SMEs face is developing their own financial management practices. The author reports that managers in general have a poor grasp of basic financial management concepts, as most think that financial management consists of keeping adequate financial records.

Zabri et al. (2017) conducted a review of the literature on SMEs' financial practices (more specifically, managers' financing preferences) and analysed these companies' financing, financial practices, and management characteristics. Their study focused on understanding SMEs' financing preferences and their relationship with managers' and/or owners' characteristics, while keeping in mind the different sources of finance available.

Frimpong (2018) examined the effect of SME financial management practices on access to external financing in Ghana, concluding that the preparation and use of financial information, business plans, and capital budgeting increase the chances of gaining access to external financing. The research's results underscore that SMEs must incorporate good management practices into their operations in order to access bank financing.

2.3.1 Organised Accounting

The absence of reliable financial information raises the risks and costs related to taking out bank loans. Coetzee and Buys (2017) carried out a study in South Africa in which they confirmed the importance of SMEs' organised accounting, since this is the basis for projected cash flow statements and management strategies.

Regarding guarantees, an OECD (2018) report highlights that these intangible assets have become increasingly significant to SMEs and especially rapidly growing innovative companies. When this issue is analysed from an offer perspective, banks often will not consider

giving loans even to companies with a potential for growth, which can constitute a “bankable” demand for credit. These findings support the conclusion that until loan-processing techniques are improved to lower the transaction costs and risks of approving loans to SMEs, banks will have few incentives or a limited ability to exploit this market. The present study thus advances the following hypothesis:

Hypothesis 9: SMEs with organised accounting have greater access to bank financing.

2.3.2 Business Plan

SMEs need financial resources to implement their investment plans. Abdesamed and Wahab (2012) confirmed that firms’ business plans and experience have an important impact on their access to bank credit. Zarook et al. (2013) reached a different conclusion than Abdesamed and Wahab (2012) regarding companies in Libya, reporting that business plans do not have a significant effect on access to financing. That is, having a business plan influences decisions to apply for loans, but this effect is not statistically significant. Clearer strategies and company priorities could be more useful than business plans.

Khalid and Kalsom (2014) found that firms with a business plan had a stronger tendency to apply for bank loans. Their study’s results of tests based on logistic regression highlight that companies need to develop business plans, as this is a condition for being approved for these loans. The current research incorporates the above findings into the following hypothesis:

Hypothesis 10: SMEs with a business plan have greater access to bank financing.

2.3.3 Internet Purchases

The literature on studies that included Internet purchases as a variable is still quite limited (e.g., Ernst & Young, 2018). The present research seeks to confirm if a relationship exists between these purchases and access to bank financing for investments. A preliminary evaluation of this component of the research model was conducted to understand the extent to which SMEs are prepared for the digital era. Providers of financial services (i.e. traditional banks, challengers, and financial technologies) need to improve how they offer services. The following hypothesis reflects these results:

Hypothesis 11: SMEs that make Internet purchases have greater access to bank financing.

2.3.4 Credit Purchases

Sound purchase policies have an impact on companies’ financial performance. This effect is related to both the quality of outputs – given their direct relationship with inputs – and to the financial margins that can be generated. In addition, purchases can be an indicator of SMEs’ good management practices. To find support for these ideas, a search was conducted of the literature on empirical research concentrating on the connection between credit purchases and access to financing. However, this discussion began amongst scholars only relatively

recently, so little has been published on the topic. The present study incorporates these ideas into the final hypothesis:

Hypothesis 12: SMEs that make credit purchases have greater access to bank financing.

3. Methods and Materials

This research uses a mixed-method sequential explanatory design approach, which includes quantitative analysis followed by a qualitative study (Creswell and Creswell, 2003). The rationale for this methodology is that quantitative data and analyses can provide a broader understanding of the research problem. Qualitative data and analyses refine and explain statistical results by exploring participants' opinions more deeply (Creswell and Creswell, 2003; Rossman and Wilson, 1985; Tashakkori and Teddlie, 1998). In this research a complementary approach is used, given that each method addresses a related research question (Palinkas et al., 2011).

Insert Figure 2 near here

3.1 Quantitative Study

3.1.1 Size and Composition of Quantitative Research Sample

The quantitative research relied on the United Nations University World Institute for Development Economic Research's (2018) database to analyse the selected variables extracted from the literature. This database is the result of a survey planned and conducted by researchers at the University of Copenhagen's Development Economics Research Group, the United Nations University World Institute for Development Economics Research, and the Eduardo Mondlane University's Centre for Studies on Economics and Management in Maputo. The data come from the main survey of the *Inquérito às Indústrias Manufatureiras de Moçambique* (Survey of Manufacturing Industries in Mozambique) 2017, which covers a universe of around 550 SMEs in the manufacturing industry in Mozambique and which is conducted every five years. The questionnaire can be found at <https://www.wider.unu.edu/database/mozambican-manufacturing-firms-database>.

The present study's sample of 347 SMEs was drawn from this database by selecting only companies that, at the date of the interviews, had a *Número Único de Identificação Tributária* (Unique Tax Identification Number), and are therefore considered formal firms³. The remaining 203 companies did not present a Unique Tax Identification Number and for this reason were excluded from the sample.

³ Firms without Unique Tax Identification Number are not eligible for bank financing.

In applying the logistic regression key assumptions were considered and fulfilled, namely: (i) there is no linear relationship between the dependent variable and the independent variables; (ii) the dependent variable is dichotomous (had or did not have access to external financing/bank credit); (iii) the independent variables need not be interval, nor do they need to have normal distribution, nor be related to linearity, nor have equal variance in each group; (iv) the categories (groups) are mutually exclusive and exhaustive; a case can only be in a single group and each case must have a member of one of the groups. This means that the data cases must be unrelated (Field, 2009); and (v) samples need to be large enough for linear regression because likelihood ratios are estimates made based on large samples. A minimum of 50 cases per estimator is recommended.

The research model's dependent variable (Y) is access to bank credit (No = 0, for no access; and Yes = 1, for access). The independent variables (X_i) and their measurement are presented in Table 1.

Insert Table 1 near here

The database covers all of Mozambique, as the survey included northern, central, and southern regions. The percentage of the total number of companies for each area is as follows: 11.2% from the northern region of Nampula, 32.3% from the central regions of Sofala, Manica, and Tete, and 56.5% from the southern regions of Maputo city, and Maputo and Gaza Provinces. The data's geographical distribution ensured that the current results are representative of the entire country.

3.1.2 Quantitative Data Collection and Analysis Techniques

The data come from a primary source, namely, the aforementioned United Nations University database. This study uses a logistic regression model to generate empirical results for the binary dependent variables and to measure the independent variables' influence as demand-side determinants of SMEs' access to bank loans. This technique can be used to describe and test hypotheses about relationships between categorical outcome variables and one or more categorical or continuous explanatory variables (Peng et al., 2002).

To estimate the regression it is necessary to calculate the odds ratio or "odd ratio" from the Equation. This type of model applies the maximum likelihood estimation after transforming the dependent variables into logit variables, that is, the natural logarithm of the probability that a dependent variable will occur (Weltervreden and Boschma, 2008). In logistic regression the likelihood of an event occurring can be estimated directly. Dependent variable Y can assume two values (i.e. 1 or 0) and exist in conjunction with p independent variables $X_1, X_2, \dots, X_p$. The model validation metric used was the Hosmer Lemeshow Test. This test, which measures the degree of accuracy of the logistic model, checks whether there are significant differences between the classifications performed by the model and the observed reality. It seeks not to reject the hypothesis that there are no differences between the predicted and observed values.

In this case, $\chi^2(8) = 7.092$, and was into significant ($p = 0.527$), suggesting that the model was adequate to the data.

3.2 Qualitative Study

3.2.1 Size and Composition of Qualitative Research Sample

The number of participants was not predetermined. After 30 interviews were conducted, sufficient convergence was detected in the data to indicate that a saturation point had been reached. Steps were taken to ensure that the qualitative sample was representative of all of Mozambique's SMEs. The final sample included manufacturing industry SMEs, which whenever possible were selected from those interviewed during the survey used to build the database.

3.2.2 Qualitative Data Collection and Analyses Techniques

The primary data were gathered by following a semi-structured interview guide during telephone interviews. The latter were the best option available during the coronavirus pandemic. The data were analysed using the deductive thematic analysis technique in order to find significant units of meaning in the interviewees' narratives. The narratives were examined to identify themes, and then each theme was subdivided into categories. All the participants' responses and comments were processed, and the results provide substantive evidence of the categories' and themes' representativeness.

The analyses sought to identify, analyse, and describe the patterns (i.e. themes) that emerged from the data, organising and providing details about the data collected. In addition, various aspects were interpreted with reference to the research problem (Braun and Clarke, 2006). The data analyses focused on explaining the hypotheses testing results from the quantitative research phase, so the analyses' scope was restricted to testing or confirming and/or justifying the hypotheses. As indicated by Dana and Dana (2005) a qualitative approach can also be used to verify validity of quantitative research.

3.3 Combined Analyses

This final phase was dedicated to interpreting all the analyses' results to draw conclusions and determine implications for policies. Avenues for future research were also identified.

4. Results and discussion

4.1 Descriptive statistics

Data show that only 12.7% of SMEs in the sample had access to bank credit. The majority (85.9%) of the managers in the sample are male, and 10.4% aged less than 30 years old; while only one-fifth have higher education and half have experience that varies between 10 and 30 years. Regarding the SMEs' characteristics, just over half of the companies (56.8%) have been in existence for between 5 and 20 years, just under half (46.4%) have between 5 and 30 employees, about three quarters of the companies (76.4%) have gross profits of less than 1 million meticaïs per year (about 16,150 US), and with regard to equity, about two thirds of the companies (68.3%) have equity less than or equal to 1 million meticaïs (about 16.150 US dollars). Finally, in relation to SMEs' financial management practices, around 40% of companies indicated having organised accounts, while credit purchases have not been a financial practice for just over two thirds (68%) of the companies, revealing a potential difficulty in managing a possible bank loan; the overwhelming majority of companies (88.5%) do not shop online; and with regard to business plans, two thirds of the companies (70%) do not have business plans. Table 2 presents more details for each variable in the sample.

Insert Table 2 near here

4.2 Logistic regression results and testing of hypotheses

Table 3 presents the logistic regression coefficients, which are analysed below.

Insert Table 3 near here

The logistic regression equation including the coefficients is:

$$Y = -1,972 - 0,054 X_1 - 0,284X_2 + 0,605X_3 - 0,157 X_4 - 0,530 X_5 + 0,423 X_6 + 0,399 X_7 - 0,452 X_8 - 0,492 X_9 - 0,219 X_{10} + 0,252 X_{11} + 0,254 X_{12} + \varepsilon 1.438$$

where

Y = Access to finance

X_1 = Gender; X_2 = Age; X_3 = Experience; X_4 = Education; X_5 = Company age; X_6 = Company size; X_7 = Gross profit; X_8 = Equity; X_9 = Organised accounting; X_{10} = Credit purchases; X_{11} = Internet purchases; X_{12} = Business plan;

Testing of Hypotheses

The results show that managers' characteristics, SMEs' characteristics, and their financial management practices have a relationship with SMEs' access to bank finance. Obviously, the relationships that are established do not have the same direction and influence, but the need to bring these aspects into the debates on bank finance for SMEs is apparent. These

results were demonstrated through hypotheses tests and logistic regression, which highlighted aspects that have been little explored in the literature concerning the demand side of SMEs' access to bank financing. Table 4 presents the correlation matrix coefficients. The highest absolute correlation coefficient is of 0.307, which indicates the absence of multicollinearity.

Insert Table 4 near here

4.3 Thematic analysis

Table 5 presents the summary of the thematic analysis on the three strands analysed, i.e. managers' characteristics, SMEs' characteristics, and financial management practices.

Insert Table 5 near here

The analysis highlighted themes such as risk tolerance, financial literacy, and financial management skills as the main categories that contribute to the access to bank credit, from the demand perspective.

4.4 Joint Analysis with both quantitative and qualitative methods

4.4.1 Managers' and/or Owners' Characteristics and Access to Financing

Managers' characteristics and access to financing were assessed by the following hypotheses:

- H1: SMEs with male managers and/or owners have greater access to bank financing.
- H2: The older that managers and/or owners are, the better their access becomes to bank financing.
- H3: The more years of experience that managers and/or owners have, the better their access to bank financing becomes.
- H4: The higher that managers' and/or owners' level of education is, the better their access to bank financing becomes.

Table 6 presents the summary of the results of the relationships and association on the managers' characteristics.

Insert Table 6 near here

The hypothesis testing results reveal that the relationship between managers' and/or owners' characteristics (male gender, age, and education) and Mozambican SMEs' access to bank financing is not statistically significant – except for the variable of experience. Managers' characteristics influence access to financing in different ways. While experience has a positive impact, male gender, age and education have the opposite effect. In addition, only experience's impact is statistically significant (i.e. a significance level of 95%) with regard to explaining SMEs' access to bank loans.

Male gender: The results of this study are in line with those of Nguyen and Luu (2013), (Campanella and Serino, 2019) and (Moro et al., 2017), who argued that gender was not a significant variable in determining the source of financing for new investments by SMEs, although it did influence it. More specifically, male managers are 0.948 times less likely to gain access to bank financing than female managers are, which is contrary to the findings that support the view that women-owned firms are disadvantaged in the market for small-business credit (Chaudhuri, Sasidharan, and Raj, 2020). However, in relation to entrepreneurial characteristics and access to credit, Thuku (2017) found that banks prefer women over men for the provision of credit, while Fatoki and Asah (2011) found for the case of South Africa that this factor internal to SMEs had an influence on access to external finance.

Age: In the context of Mozambique, age has a negative influence, although not statistically significant, which is aligned with Coleman (2000), Nguyen and Luu (2013), and Campanella and Serino (2019). Older managers, in turn, have a much lower chance (0.585) of successfully applying for loans compared to younger managers. Surprisingly, this finding contrasts with that of a previous study from Obamuyi (2017), which found that in sub-Saharan Africa the very young (age 18-24 years) have less financing but higher growth-expectations than even the young adults (age 25-34). Financing benefits expectations, especially for the very young entrepreneurs.

Experience: as indicated above, experience's impact is statistically significant. This result is partially aligned with Pandula (2011), Bartlett and Bukvič (2003), Zhang G. (2008), Cassar (2004), Wu, Song, and Zeng (2008), and Borgia and Newman (2012). Professional experience has the greatest impact, as those who have experience are 1.832 times more likely to have access to financing.

Level of education: The level of education negatively influences access to finance, although the size of the influence is not statistically significant. This finding is not in line with the study of Xiao (2008), who argued that people with bachelor's level or above tolerate risk more, and therefore have a greater appetite for borrowing. Level of education has a negative effect on access to loans, namely, managers with higher education degrees have a lower likelihood (0.854) of applying for bank loans. This might be that more education gives managers the option to find other sources of finance. Similar findings were reported by Buferna, Bangassa, and Hodgkinson (2005), Cassar (2004), Borgia and Newman (2012), and David and Scott (2010).

The qualitative analyses also confirmed that this relationship exists given that more than three-fourths of the interviewees stated that experience and education have an impact on access to financing. This figure falls to around two-thirds for age and male gender.

The themes identified include those that more fully explain the quantitative analyses' findings, including managers' attitude toward the possibility of taking out bank loans. This theme comprises the categories of risk, cost, and value. The next most important themes are internal aspects, especially projects' quality and/or viability in terms of finance, which can ultimately inspire more self-confidence in managers (i.e. perceived behavioural control) regarding their ability to take out loans.

These themes are partially aligned with the theory of planned behaviour, which argues that managers' and/or owners' intention to apply for bank loans is determined by their intentional behaviour (Ajzen, 1991; Kijkasiwat, 2021). The behaviour depends on attitudes, subjective norms, and perceived behavioural control. In Mozambique's case the results not only verify the theory of planned behaviour's assumptions but also highlight themes such as financial literacy, management skills, and overall training, which further affect SMEs' access to bank financing. These findings are also in line with Rahim and Balan (2020), who recommend financial education training for SMEs on a regular basis to keep them well informed and equipped with the latest ways of managing the finances of their businesses and the findings of Ye and Kulathunga (2019), who considered financial literacy as a predictor of access to finance and financial risk attitude.

4.4.2 SMEs' Characteristics and Access to Financing

SMEs's characteristics and access to financing were assessed by the following hypotheses:

- H5: The older that SMEs are, the better their access to bank financing becomes.
- H6: The larger that SMEs are, the better their access to bank financing becomes.
- H7: The larger that SMEs' gross profit is, the better is their access to bank financing.
- H8: The more equity SMEs have, the better their access to bank financing becomes.

Table 7 presents the summary of the results of the relationship and association on the SMEs' characteristics.

Insert Table 7 near here

Companies' age and equity have a negative effect on access to loans, but size and gross profit have a positive impact. None of these variables' influence is statistically significant at a significance level of 95%. However, firms' size, gross profit, and equity have a statistically significant impact at a significance level of 90%. Equity's negative effect and the low value of

this capital could help explain SMEs' limited access to financing. These findings provide support for public policies focused on promoting SMEs' access to bank loans.

Firm age: For each additional year they exist, SMEs are 0.588 times less likely to gain access to bank loans, aligned with Agyei, Sun, and Abrokwah (2020). These results contrast with those obtained by Botello (2015), who advocates that the degree of consolidation and experience of the firm in the market constitute a signal to credit providers that the firm is stable and that it can generate positive cash flows based on its customers and market structure, and Guariglia (2009), who found that the age of the firm was an obstacle to obtaining finance, i.e. the younger the firm the greater the difficulties in accessing finance. A positive relationship was also identified by Kasseeah and Thoplan (2012), Ghimire and Abo (2013), Kira and He (2012), Shaista (2019), and Andrieu, Staglianò, and van der Zwan (2018). However, business life cycle theory suggests that a firm's access to finance depends on its stage of development (Berger and Udell, 1998) and not necessarily on its age.

Firm size: Hiring one more employee means that firms have a much greater chance (1.527) of having access to bank credit, which is in line with findings of Bigsten (2003), Demirgüç-Kunt et al. (2008), Drakos and Giannakopoulos (2011), Kasseeah and Thoplan (2012), Hainz and Nabokin (2013), Andrieu et al. (2018), Shaista (2019), and Agyei et al. (2020). Other studies found the opposite, such as Khalid and Kalsom (2014) and Ghimire and Abo (2013). Note that in our sample around 70% of the firms have fewer than 30 employees.

Gross Profit: The statistical results show a positive relationship between the gross profit and access to finance, although it is statistically significant at only a 90% significance level. It was found that if SMEs' gross profit rises one unit, they are 1.491 times more likely to apply successfully for loans. These results concur with those of Olutunla and Obamuyi (2008), Shaista (2019), and Agyei, Sun, and Abrokwah, (2020), but are contrary to those of Thuku (2017), who observed that credit has no positive effect on firm performance and growth, and as a consequence, the limited access to credit by SMEs results from their limitations (organised accounting, audited accounts, and lack of collateral). These results might be considered valid for the Mozambican context when analysing the SMEs that did not have access to bank credit.

Equity: Some prior studies have emphasised alternative sources of finance that do not require extensive equity for the company to have access to bank financing. In this research results for equity indicate that an increase of one unit in this capital's value means that companies have a significantly lower tendency (0.636) to take out bank loans. These results contrast with those of Xiao (2007), who found that high equity values were associated with higher levels of risk tolerance, and therefore, in this case, with a greater appetite for borrowing. In Mozambique, at least according to the data from this sample, the opposite is true, that is, the values of equity capital are mostly very low, which implies equally low levels of risk tolerance, which may explain the limited access to bank credit.

The qualitative analyses also confirmed that a relationship exists between SMEs' characteristics and access to financing. According to the vast majority of interviewees,

companies' gross profit, equity, and age influence this connection. Firms' size was also thought to have an effect by less than half the participants, while the rest reported that size has no influence on access to bank financing.

The themes that more fully explain the quantitative analyses' findings include top-level managers' attitude toward the option of applying for bank loans. The results highlight attitudes toward risk (i.e. risk tolerance) and value (i.e. opportunities for business activities to increase and/or create value), as previously discussed. Additional significant themes are internal features including confidence and/or comfort and solvency, which foster more tranquillity in SMEs and the expectation that they will be able to honour their commitments. Other significant internal aspects that affect decisions to take out bank loans include brand awareness (i.e. company age) and the quality and/or viability of projects and/or business activities.

These results' alignment with the theory of planned behaviour is made clear through managers' attitude and perceived behavioural control. Of the variables that significantly affect access to financing, the main determinants are confidence and/or comfort (i.e. ability to pay off loans), conditions created by internal aspects, solvency, the existence of collateral, and risk tolerance.

4.4.3 SMEs' Financial Management Practices and Access to Financing

SMEs' financial management practices and access to financing were assessed by the following hypotheses:

- H9: SMEs with organised accounting have greater access to bank financing.
- H10: SMEs with a business plan have greater access to bank financing.
- H11: SMEs that make Internet purchases have greater access to bank financing.
- H12: SMEs that make credit purchases have greater access to bank financing.

Table 8 presents the summary of the results of the relationship and association on the SMEs' financial management practices.

Insert Table 8 near here

The hypotheses testing revealed that the relationship between SMEs' financial management practices and access to bank financing in Mozambique is not statistically significant. Organised accounting and business and/or investment plans have a positive effect on access to loans, but credit and Internet purchases have a negative impact.

Organized accounting: In Mozambique SMEs with organised accounting are 1.290 times more likely to gain access to bank financing. In the sample, about 40% of the companies reported having organised accounting, while the remaining 60% face challenges with the organisation of their accounts, which is an aspect that has been mentioned in the literature as one of the factors that limit access to bank financing by SMEs. Regarding the access to bank

credit, of the 40% of companies that reported having organised accounting only 4.6% had access, while for the remaining 60% that face challenges with the organisation of their accounts, this percentage increases to 8.1%. This difference can be explained by the existence in these companies of other elements that are beneficial to the bank following a thorough assessment of their risk profile. For example, when assessing the scant accounting records available, the existence of collateral, among other things, can increase access to credit. However, for SMEs that do not adopt standard methods in financial reporting, their capacity to attract loans from banks is reduced (Dauda and Nyarko, 2014).

Business Plan: Business and/or investment plans mean that SMEs are 1.286 times more likely to have access to loans for funding or co-funding part or all of their planned investments. The process of developing a business plan provides an opportunity not only to understand more fully the relevant business ventures and their challenges but also, more importantly, to clarify strategies that companies should implement to ensure growth, and thus the ways this can be financed. Results from Mozambique are aligned with Abdesamed and Wahab (2012), Zarook et al. (2013), and Khalid and Kalsom (2014), highlighting the relevance of business plan as a condition to have access to bank credit.

Internet purchases: The practice of making Internet purchases is associated with a 0.804 lesser chance of obtaining bank financing. Unfortunately, published studies that include this variable are scarce, which limits the possibility of comparing these results with similar studies. However, taking into account that digital E&Y (2018) is the heart of the next generation of financial services provision for SMEs, the limited use of internet shopping translates into challenges for the digitalisation of SMEs. Increasing the frequency of purchases by these companies and the integration of innovative and digital data offerings should be complemented by technical assistance.

Credit purchases: The companies that make credit purchases have a much lower chance (0.611) of obtaining loans, given that this multiplier shows a smaller likelihood (i.e. <1). Unfortunately, as this is still a relatively recent debate, little is documented about this relationship, making it harder to compare the results with previous studies.

The qualitative analyses, however, confirmed that a connection exists between access to loans and the variables of organised accounting, business plan, credit purchases, and Internet purchases. Notably, fewer than a tenth of the interviewees confirmed the last variable's effect due to SMEs' limited use of the Internet and related purchases. Various themes more effectively explain the quantitative analyses' findings. The most important accounting feature is the availability of financial information, which tends to be somewhat informal in Mozambique. The next most important feature is financial management skills. These skills most strongly influence business plans' implementation because financial management competencies allow companies to understand and make use of these valuable tools.

Other significant internal aspects are strategic information and sales forecasts, which banks require from loan applicants. SMEs' risk-taking propensity tends to be lower when the

relevant skills and strategic information, as well as reliable, consistent forecasts, are present. Credit purchases are most influenced by knowledge (i.e. finance education), followed by risk. Finally, knowledge is equally critical to Internet purchases, especially in the areas of credit and financial management skills, with risk contributing less to these purchases.

These findings' alignment with the theory of planned behaviour is clear in all dimensions. As with managers' characteristics, the results for Mozambique's SMEs highlight the themes of management skills and financial literacy, which have a similar impact on these companies' access to bank financing.

5 Conclusions, limitations, and future research

The present research thus sought to identify and understand the demand-side variables that affect SMEs' access to bank credit. More specifically, the aim was to answer the following research questions: (i) which characteristics of managers and SMEs and their financial management practices influence access to bank loans; (ii) how do these demand-side determinants affect access to bank financing; and (iii) based on the answers to the above questions, how can SMEs' access to bank credit be improved and/or increased. Results of the research highlight the demand-side factors that influence access to financing by SMEs, that is, whether they influence it positively or negatively and the magnitude of this influence. They also provide inputs for policy making on access to finance for SMEs; delve deeper into the causes and consequences of the gaps that inhibit SMEs from submitting their credit applications, and subsequently from obtaining loans, i.e. seeing their applications rejected; inform on intervention actions and measures best suited for the SME context in Mozambique; and provide inputs to stakeholders in the financial ecosystem on ways to improve access to finance for SMEs.

Managers' and/or owners' and their firms' characteristics more strongly influence access to loans than financial management practices do. The quantitative research revealed that experience, company size, gross profit, and equity are the demand-side determinants that significantly affect manufacturing industry SMEs' access to bank credit. The qualitative research, in turn, generated eight explanatory variables (i.e. themes and categories) and the patterns that produce them.

The first variable is finance and management education, including financial literacy and financial management skills. The second is the quality of services given by financial services providers, that is, service quality, information made available, and good grasp of customers' needs. The third variable is lessons SMEs have learned regarding what is necessary to obtain loans and how to avoid defaulting on loans. The fourth is cultural aspects, including gender inequality, expected behaviour, and informal financial management. The fifth is attitude toward risk (i.e. level of risk tolerance or risk-taking propensity), costs (i.e. interest rates and cost and value structure), and business opportunities and value created by business activities.

The sixth variable is companies' internal features, which include financial needs; projects and/or business activities' quality and/or viability, business performance, reputation, and maturity; and level of preparation for taking out loans, self-financing, capacity for doing business and undertaking new activities, confidence and/or comfort, perseverance, brand awareness, ability to negotiate, capacity for paying off loans and solvency. The seventh is the conditions offered, namely banks' requirements (e.g. collateral and/or guarantees), financial information available, strategic information, and sales forecasts. The last variable is managers' beliefs about the economic climate's evolution and economic volatility and/or unpredictability and the need to believe in the relevant projects.

The study demonstrates that contrary to the measures that have been implemented to increase SMEs' access to finance, the need to understand the determinants on the demand side is crucial to inform effective strategies and instruments.

This study fills a research gap by examining the demand-side factors that influence SMEs' access to bank financing in the manufacturing industry in developing economies. The results provide a deeper understanding of which determinants are crucial in order to ensure effective strategies and tools in developing countries.

An important implication of the findings is that policymakers need to implement more holistic approaches that prioritise demand-side factors, and governments should continue to support SMEs and also develop programmes to enhance investment readiness amongst SME owner/managers (Amarteifio and Frimpong, 2019).

This research has limitations including a focus on a single country, quantitative data covering just one year, limited information on SME financing in Mozambique and on comprehensive information on the manufacturing industry, in which several sub-sectors are included.

Future investigations could include longitudinal research and parallel studies in other sectors and regions, as well as the inclusion of supply-side variables. Other studies could use the themes and categories identified in the present research to conduct an explanatory-sequential investigation or carry out research on digital platforms providing access to bank loans and SMEs' preferences regarding financing.

Acknowledgements

Funding: This work was supported by Fundação para a Ciência e a Tecnologia, grant UIDB/00315/2020.

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Table 1: Independent Variables.

Variables	Operationalisation	Measures	Classification of variables
Manager/owner			
1. Gender (X ₁)	What is the gender of the manager/owner	- Female = 0 - Male = 1	Independent Variable Dichotomous Categorical
2. Age (X ₂)	What is the age of the manager/owner	Years	Independent Variable
3. Experience (X ₃)	How many years of experience does he have in the company	Years	Independent Variable
4. Education (X ₄)	What is the education level of the manager/owner	- Not higher = 0 - Higher = 1	Independent Variable Dichotomous Categorical
Small and Medium Enterprise			
5. Company age (X ₅)	How old is the SME	Years	Independent Variable
6. Company size (X ₆)	How many employees does the SME have	Number of employees	Independent Variable
7. Gross profit (X ₇)	What was the gross profit in 2016	Value in Meticaïs	Independent Variable
8. Equity (X ₈)	What was the value of equity capital in 2016	Value in Meticaïs	Independent Variable
Financial Management Practices			
9. Organised accounting (X ₉)	Does the SME have organised accounts	No = 0 Yes = 1	Independent Variable Dichotomous Categorical
10. Credit purchases (X ₁₀)	SME makes credit purchases	No = 0 Yes = 1	Independent Variable Dichotomous Categorical
11. Internet purchases (X ₁₁)	SME purchases products over the Internet	No = 0 Yes = 1	Independent Variable Dichotomous Categorical
12. Business plan (X ₁₂)	SME has business and/or investment plan (past three years)	No = 0 Yes = 1	Independent Variable Dichotomous Categorical

Table 2: Descriptive statistics of the sample (N = 342)

Variables	Explanation	% in the sample	% with Access to bank credit
1. Gender (X ₁)	Female Male	14.1% 85.9%	1.7% 11.0%
2. Age (X ₂)	≤ 30 years > 30 – < 70 years ≥ 70 years	10.4% 86.1% 3.5%	1.4% 11.0% 0.3%
3. Experience (X ₃)	≤ 10 years > 10 < 30 years ≥ 30 years	21.9% 52.2% 25.9%	1.8% 6.9% 4.0%
4. Education (X ₄)	Not higher Higher	79.0% 21.0%	9.5% 3.2%
5. Company Age (X ₅)	≤ 5 years > 5 < 20 years ≥ 20 years	2.6% 56.8% 40.6%	0.6% 7.5% 4.6%
6. Company Size (X ₆)	≤ 5 employees > 5 < 30 employees ≥ 30 employees	24.2% 46.4% 29.4%	1.4% 6.4% 4.9%
7. Gross profit (X ₇)	≤ 1 Million MT > 1 < 3 Millions MT ≥ 3 Millions MT	76.4% 7.8% 15.8%	5.8% 2.0% 4.9%
8. Equity (X ₈)	≤ 1 Millions MT > 1 < 3 Millions MT ≥ 3 Millions MT	68.3% 18.2% 13.5%	9.2% 1.8% 1.7%
9. Organised accounting (X ₉)	No = 0 Yes = 1	60.0% 40.0%	8.1% 4.6%
10. Credit purchases (X ₁₀)	No = 0 Yes = 1	68.0% 32.0%	7.2% 5.5%
11. Internet purchases (X ₁₁)	No = 0 Yes = 1	88.5% 11.5%	10.4% 2.3%
12. Business plan (X ₁₂)	No = 0 Yes = 1	70.3% 29.7%	9.2% 3.5%

Note: 1 Million Meticaïs (MT) equivalent to US\$ 16,500.00

Table 3: Logistic regression coefficients.

Variables	B	SE	Wald	df	Sig.	Exp(B)	95% CI for Exp(B)	
							Lower	Upper
Male gender (X ₁)	−0.054	0.507	0.011	1	0.916	0.948	0.351	2.562
Age (X ₂)	−0.284	0.520	0.297	1	0.585	0.753	0.272	2.087
Experience (X ₃)	0.605	0.280	4.659	1	0.031**	1.832	1.057	3.174
Education (X ₄)	−0.157	0.420	0.140	1	0.708	0.854	0.375	1.946
Company age (X ₅)	−0.530	0.331	2.574	1	0.109	0.588	0.308	1.125
Company size (X ₆) (number of employees)	0.423	0.249	2.880	1	0.090*	1.527	0.936	2.490
Gross profit (X ₇)	0.399	0.232	2.976	1	0.085*	1.491	0.947	2.347
Equity (X ₈)	−0.452	0.266	2.892	1	0.089*	0.636	0.378	1.071
Organised accounting (X ₉)	0.254	0.360	0.500	1	0.480	1.290	0.637	2.610
Credit purchases (X ₁₀)	−0.492	0.381	1.675	1	0.196	0.611	0.290	1.288
Internet purchases (X ₁₁)	−0.219	0.493	0.197	1	0.657	0.804	0.306	2.110
Business plan (X ₁₂)	0.252	0.399	0.398	1	0.528	1.286	0.589	2.810
Constant	−1.972	1.438	1.881	1	0.170	0.139	—	—

Note: B = beta coefficient; SE = standard error; Wald = Wald statistic; df = degrees of freedom; Sig. = significance; Exp(B) = exponentiation of B coefficient; CI = confidence interval; * significance level of 90%; ** significance level of 95%.

Table 4: Correlation Matrix coefficients.

Item	Item code	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Male Gender	(1)	1.000											
Age	(2)	-.027	1.000										
Experience **	(3)	.160	-.307	1.000									
Education	(4)	.116	-.112	-.108	1.000								
Company Age	(5)	-.019	-.027	-.296	.067	1.000							
Company Size *	(6)	-.062	.101	-.011	.026	-.063	1.000						
Gross Profit *	(7)	.028	.039	.082	.137	-.115	-.240	1.000					
Equity *	(8)	.084	.002	-.063	.080	.025	-.067	-.290	1.000				
Credit Purchases	(9)	.147	-.124	-.023	.010	.068	-.106	.174	.130	1.000			
Internet Purchases	(10)	-.104	.117	.020	-.154	-.119	.073	.082	.018	-.291	1.000		
Business Plan	(11)	-.061	-.214	.132	.015	-.031	.118	-.020	-.005	.039	-.025	1.000	
Organised Accounting	(12)	-.004	.073	-.036	.000	-.017	-.027	.111	-.108	-.044	-.002	-.246	1.000

* Level of significance of 90%; ** Level of significance of 95%

Table 5: Summary of the Thematic Analysis

3 rd order - Concepts	2 nd order - Categories	1 st order - themes											
		Manager/Owner				Small and Medium Enterprises				Financial Management Practices			
		Gander	Age	Experience	Education	Firm age	Size (number of employees)	Gross Profit	Equity	Organised accountin g	Business Planos	Credit purchases	Internet purchases
Knowledge (banking and finance related)	Financial Education	☒	☒	☒	☒					☒		☒	☒
	Management Education				☒					☒	☒		☒
Perceptions (interaction with banking sector)	Service Quality	☒	☒								☒		
Previous experiences (past)	Lessons learned	☒	☒	☒	☒	☒				☒			
Subjective norms	Cultural aspects	☒	☒		☒					☒			
Attitude (consequences)	Risk tolerance (negative)	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	Cost (negative)	☒	☒	☒	☒		☒				☒		
	Value (opportunity)		☒			☒	☒	☒	☒				
Perceived behavioural control (expectations)	Internal Aspects	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	Offered conditions	☒	☒			☒		☒	☒	☒			
	Managers' beliefs	☒	☒							☒	☒		

Table 6: Summary of the managers' characteristics

Managers' characteristics	Hypothesis	P value	Results	
			Relationship	Association
Gender	H1: SMEs with male managers and/or owners have greater access to bank financing.	.916	Negative (contrary to expectations)	Not significant
Age	H2: The older managers and/or owners are, the better their access becomes to bank financing.	.585	Negative (contrary to expectations)	Not significant
Experience	H3: The more years of experience managers and/or owners have, the better is their access to bank financing.	.031**	Positive	Confirmation of hypothesis
Education	H4: The higher managers and/or owners' level of education is, the better their access to bank financing becomes.	.708	Negative (contrary to expectations)	Not significant

** Level of significance of 95%

Table 7: Summary of the SMEs' characteristics

SMEs' characteristics	Hypothesis	P value	Results	
			Relationship	Association
Firm Age	H5: The older SMEs are, the better their access to bank financing becomes.	.109	Negative (contrary to expectations)	Not significant
Firm Size	H6: The larger SMEs are, the better their access to bank financing becomes.	.090*	Positive	Significant
Gross Profit	H7: The higher SMEs' gross profit is, the better their access to bank financing becomes.	.085*	Positive	Significant
Equity	H8: The more equity SMEs have, the better their access to bank financing becomes.	.089*	Negative (contrary to expectations)	Significant

* Level of significance of 90%

Table 8: Summary of SMEs' Financial Management Practices

SMEs' Financial Management Practices	Hypothesis	P value	Results	
			Relationship	Association
Organised accounting	H9: SMEs with organised accounting have greater access to bank financing.	.480	Positive	Not significant
Credit purchases	H10: SMEs with a business plan have greater access to bank financing.	.196	Negative (contrary to expectations)	Not significant
Internet purchases	H11: SMEs that make Internet purchases have greater access to bank financing.	.657	Negative (contrary to expectations)	Not significant
Business Plan	H12: SMEs that make credit purchases have greater access to bank financing.	.528	Positive	Not significant

Figure 1: Structural model (Relationship between demand-side variables and access to bank credit)

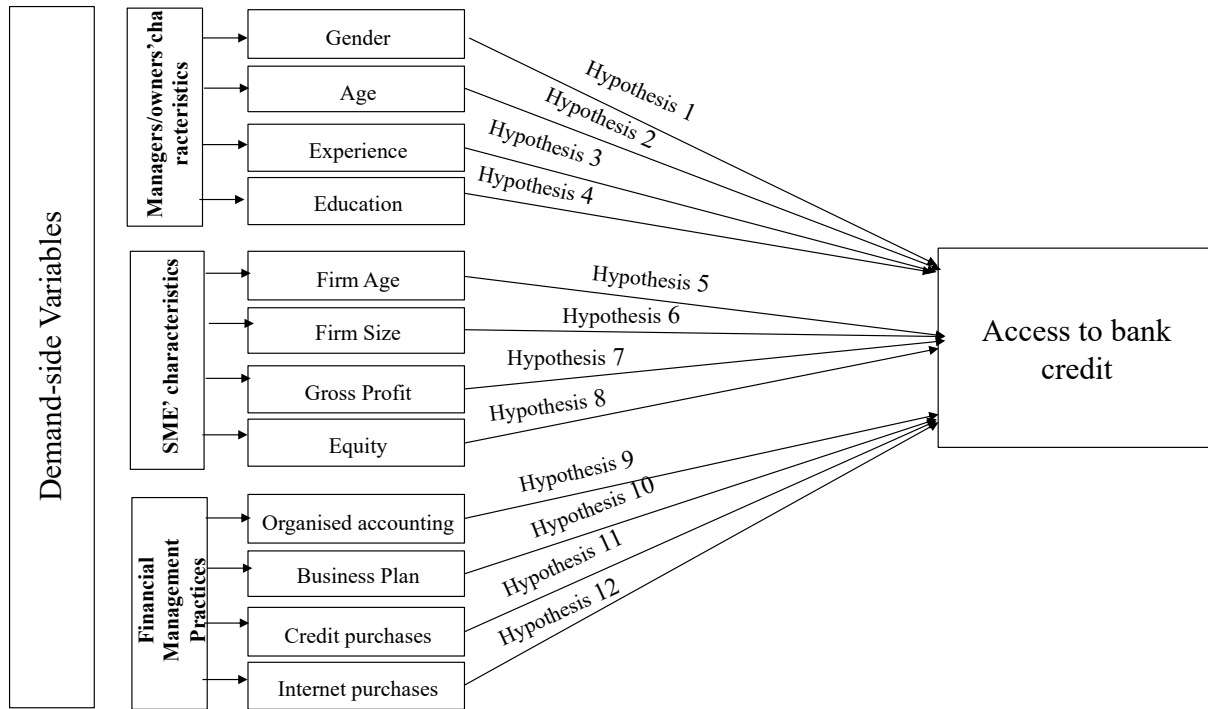


Figure 2: Mixed-methods sequential explanatory design.

Research phases	Quantitative	Qualitative	Combined analysis
Aims	To determine the relationships and associations between variables	To identify the reasons why the relationships and associations between variables exist	▪ To draw conclusions and determine implications for policies ▪ To identify avenues for future research
Sample and design	▪ 347 SMEs ▪ Database SMEs ▪ Eligibility criteria	▪ Random selection and saturation at 30 SMEs ▪ Eligibility criteria	All the analyses' results
Data gathering techniques	Secondary sources – face-to-face interviews (2017)	▪ Semi-structured interviews ▪ Telephone interviews (March–April 2020)	Previous quantitative and qualitative analyses
Data analysis techniques	▪ Descriptive statistics ▪ Binary logistic regression (SPSS software)	Deductive thematic analysis (no software used)	Manual analysis