Small Bus Econ
https://doi.org/10.1007/s11187-023-00767-1

Deconstructing involuntary financial exclusion: a focus on African SMEs

Amon Simba · Mahdi Tajeddin · Léo-Paul Dana · Domingo E. Ribeiro Soriano

Accepted: 29 March 2023

Abstract Small and medium-sized enterprises (SMEs) struggle to obtain credit when credit ratings and collateral are used as criteria to assess their credit applications. In the context of Africa, the financial markets have gaping institutional voids, and contextual insights into SMEs' experiences remain underdeveloped. Drawing on the stakeholder-agency theory of debt financing, this paper advances the scholarly conversation by theorising about how collateral security, collateral security value and the gender of SME owners lead to the involuntary financial exclusion of many manufacturing businesses in Africa. Analysis of the World Bank Enterprise Survey (WBES) dataset reveals that collateral security and collateral security value, together with gender biases in Africa's financial markets, reduce credit access potential. Consequently, SMEs' perceptions of the likelihood of obtaining credit for business purposes are reduced. Empirical results for 13,783 SMEs across 41 African countries indicate that the motivations to apply for credit also diminish. These observations contribute to entrepreneurial financing and SME research.

Plain English Summary Although the manufacturing sector is declining in the West, it remains important in Africa. For most African countries, it helps alleviate poverty by creating jobs that enable the economic and social development of citizens. However, manufacturing SMEs face involuntary financial exclusion, even though access to financial facilities helps them develop their ventures and enhance their role in community development. This study uses cross-country data on 13,783 manufacturing SMEs across 41 African countries. The aim is to understand the extent of this problem. This paper presents empirical analysis of how collateral security, collateral security value and the gender of SME owners influence the ability of SMEs to obtain credit in Africa. It provides an understanding of how lenders use collateral security, collateral security value and gender to evaluate the creditworthiness of SME owners. Factors

A. Simba (✉)
Nottingham Business School, Nottingham Trent University, Nottingham, UK
e-mail: amon.simba@ntu.ac.uk

M. Tajeddin
Strategy and Entrepreneurship, Sobey School of Business at Saint Mary's University, Nova Scotia, Halifax, CA, USA
e-mail: mahdi.tajeddin@smu.ca

L.-P. Dana
ICD Business School of Paris, Groupe IGS, Paris, France
e-mail: lp762359@dal.ca; lpdana@groupe-igs.fr

L.-P. Dana
6100 University Ave ROWE BDG, PO BOX 15000, Halifax, Nova Scotia B3H 4R2, Canada

D. E. Ribeiro Soriano
Facultad de Economía de la Universitat de València
Edificio, Departamental Oriental Campus de los Naranjos, 46021 Valencia, Spain
e-mail: domingo.ribeiro@uv.es

Published online: 21 April 2023

affecting SMEs' ability to convince lenders in Africa to finance their businesses include their size, lack of assets or value of assets and owner's gender. This scenario affects their confidence to apply for credit. Consequently, their motivation is undermined, despite the economic and social importance of their businesses for Africans. This understanding has implications for policy institutions in Africa.
They must reconcile the needs of SMEs with the available financial services. Moreover, they must do so in a way that alleviates involuntary financial exclusion whilst enhancing community development.

Keywords Credit access · Collateral security · Gender · Financial exclusion · SMEs · Africa

JEL Classification C12 · G29 · G32 · L21 · L26 · L60 · M10 · O55

1 Introduction

In the West, the manufacturing sector is declining, replaced by knowledge-based industries (Raspe & Oort, 2006; Thelen, 2019). However, in Africa, manufacturing remains the backbone of most of the continent's economies (World Bank Group, 2015). Some scholarly research has focused on small business and entrepreneurial financing, acknowledging that the availability of financial resources is essential for business because it gives many small and medium-sized enterprises (SMEs) vital support (Binks & Ennew, 1996; Levine *et al.,* 2000; Moro & Fink, 2013; Wellalage & Locke, 2017; N'Guessan & Hartarska, 2021) for their development, growth and survival (Carbo-Valverde *et al.,* 2016; Erdogan, 2019). Regardless of the gender of the owners of SMEs in advanced economies, their businesses are reported to have access to a wide range of financial and information support services in situ (see Cowling *et al.,* 2012; Gama & Duarte, 2015; Howorth & Moro, 2012). In advanced economies, support for businesses is often provided through multiple channels, including established economic stakeholders and agents from banks, private investors (e.g. venture capitalists, business angels, serial entrepreneurs, investment syndicates and crowdfunding platforms) and government institutions (Mol-Gómez-Vázquez *et al.,* 2019; Palazuelos *et al.,* 2018).

Africa's financial markets are characterised by vast institutional voids, uncoordinated domestic policies and widespread application of derivative accounting practices. Studies suggest that in these markets, the survival and growth prospects of many SMEs are seriously compromised (Beck *et al.,* 2011; Issahaku, 2019; Santos *et al.,* 2021). Hence, for manufacturing SMEs, the availability of financial resources can be dangerously low (Bigsten *et al.,* 2003; Calabresse *et al.,* 2021; Wellalage & Locke, 2016).

An important question arising from this discussion is: *How do businesses, especially manufacturing SMEs, which are known to sustain many African economies, confront such problems when seeking bank credit* (cf. Kautonen *et al.,* 2020)? Several constraints associated with credit access for small businesses in the developing world have been identified in the literature. Examples include distortions of financial institutions and sectors (Ferreria & de Oliveira, 2019), lack of know-how on the part of banks (Beck *et al.,* 2007), information asymmetry (Beck *et al.,* 2009), the high risk of lending to small businesses due to collateral security reasons (Duarte *et al.,* 2017) and differences in gender profiles (Berguiga & Adair, 2021; Muravyev *et al.,* 2009; Wellalage & Thrikawala, 2021). These factors have been widely debated in the literature. Such obstacles discourage SMEs from applying for credit because of their inflexible use by financial lenders when determining creditworthiness (Xiang *et al.,* 2015). In a way, many SMEs are exposed to what Wasiuzzaman and Nurdin (2019) describe as "involuntary financial exclusion". This exclusion leaves SMEs unable to access and use financial services and has far-reaching implications for the role of SMEs as economic agents.

This research draws on the stakeholder-agency theory of debt financing (Diamond, 1984; Sharpe, 1990) to develop an understanding of the factors that restrict manufacturing SMEs' access and use of financial services in African financial markets. The stakeholder-agency theory of debt financing posits that the availability, terms and structure of credit are constrained by agency problems derived from biases about borrowers and their businesses, as well as conflicts of interest between borrowers and lenders (Kautonen *et al.,* 2020). Elsewhere, scholarly research suggests that the agency problem in banks is exacerbated when evaluating the creditworthiness of SME owners because of their limited liability, which has some bearing on

their ability to finance their debts (Beck *et al.,* 2009). Thus, transaction lending based on credit ratings or the value of firms' assets (Van Caneghem & Van Campenhout, 2012) has limited application to SMEs (Kautonen *et al.,* 2020) in African markets. However, because transaction lending is universally applied, there is an urgent need to consider how it reduces or enhances credit access for businesses in Africa's productive sectors, including manufacturing. Consistent with this call, the following question guides the present research:

> *Which factors do owners of manufacturing SMEs in Africa consider vital for credit access, and how do they affect their perceptions of applying for and obtaining credit?*

Existing scholarly research on the factors that affect credit access for African SMEs has mainly focused on the agriculture or farming sector in rural communities (Sarfo *et al.,* 2019; Simtowe *et al.,* 2008; Weber & Musshoff, 2012). Although this approach has provided meaningful insights into the obstacles that smallholder farmers face in relation to credit access (Foltz, 2004; Samuel *et al.,* 2017; Stringfellow *et al.,* 1997) and poverty (Biekpe, 2004; Biggs & Shah, 2002), knowledge about the factors that determine SMEs' access to finance and outcomes, particularly in manufacturing in Africa, remains limited. This scarce knowledge is scattered and fragmented (Bigsten *et al.,* 2003; Wellalage & Locke, 2016), even though the sector is classed by the World Bank Group as the cornerstone for development in Africa.

Therefore, to develop novel contextual insights into the issues associated with manufacturing SMEs' credit access in Africa, hypotheses are formulated to study the impact of collateral security, collateral security value and gender. These hypotheses are empirically tested using data on 13,783 manufacturing SMEs across 41 African countries provided by the World Bank Enterprise Surveys (WBES, 2016). Given its rigorous approach and consequent reliability, the WBES data set is used extensively for research on developing economics (e.g. Harrison *et al.,* 2014; Mitton, 2016) and studies of formal credit (Tajeddin & Carney, 2019). Thus, this data set provided valuable information on SMEs in Africa to account for firm ownership, the owner/manager's gender, credit access, various types of obstacles in operating the business and control variables. The data enabled distinction between credit access perception, credit application and the use of credit or loans in manufacturing SMEs. Given that the dependent variables were not continuous, logit techniques were favoured as opposed to standard efficient ordinary least squares (OLS), which would have yielded biased estimates. Using logit models helped produce efficient estimates based on the response probabilities for both continuous and discrete explanatory variables (Wooldridge, 2010). Equation modelling was then employed to produce reliable estimates. The outcomes of this research contribute to entrepreneurial financing, entrepreneurship and SME research in several ways.

The empirical findings of this research explain how using collateral security, collateral security value and the gender of SME owners to assess creditworthiness leads to involuntary financial exclusion. These findings extend the stakeholder-agency theory of debt financing by accounting for the business and social configurations describing how SMEs in the manufacturing business and financial lenders interact and relate to each other in Africa's financial markets. Such insights improve the understanding of the cross-fertilisation between entrepreneurial financing, entrepreneurship and SME research, with a focus on Africa.

This approach is important because African contexts are distinct enough to produce novel insights. Theoretically, the scholarly arguments extended through this empirical study are aligned with the calls of Filatotchev et al. (2022) and Welter (2011) for contextualising theory building in entrepreneurship and management research. Moreover, the entrepreneurial financing analysis presented in this paper adds an indigenous understanding that is sensitive to African financial markets. The overall research outcomes are arguably transformative in entrepreneurial financing and SME research because they call into question the existing financing provisions for manufacturing SMEs in Africa.

2 Theoretical background

What theoretical grounds support the expectation that collateral security, collateral security value and

gender are the main factors that limit credit access for manufacturing SMEs in Africa? In this section, it is argued that theories originating in the fields of small business and entrepreneurship finance, business and finance and applied economics provide the theoretical basis to explore the availability of financial provisions in Africa. Specifically, this study draws on the stakeholder-agency theory because of its implicit assumptions concerning institutional and firm interactions. Adopting theoretical arguments developed in other research domains to explain an entrepreneurial phenomenon (credit access and credit provisions in Africa) not only enriches entrepreneurship research but also advances new contextual perspectives (cf. Filatotchev *et al.* 2022; Zahra, 2007) by providing an indigenous understanding based on the distinctiveness of local contexts (Bruton *et al.,* 2022). This approach thus fosters scholarly engagement that generates complementary spaces to understand contextually embedded assumptions (Hamann *et al.* 2020).

2.1 Credit access and the stakeholder-agency relationship

Credit access can be viewed as a business financing concept that depends on lender and borrower negotiations. From this view, the stakeholder-agency theory of Hill and Jones (1992) can be used to analyse the level and extent of the interplay between credit access and its associated factors in Africa. In any context, lenders (i.e. lending institutions) are important in the financial markets because they hold essential financial resources and dispense financial provisions that can affect (both positively and negatively) survival rates, growth and expansion (Egger & Keuschnigg, 2017) of SMEs by either lowering or increasing the availability of credit lines (Bigsten *et al.,* 2003).

With stakeholder theory, such a scenario plays out in the power relationship of the social context of shareholders and the form of business ownership (Aggarwal & Goodell, 2014; Freeman, 1984). In Africa, this issue is more pronounced than elsewhere (Ibrahim & Alagidede, 2018).

Research on the developing world has shown that women are overlooked or considered incapable in business, which limits their access to financial services (Ogundana *et al.,* 2021; Ojong *et al.,* 2021; Wellalage & Locke, 2017). Gender-related barriers seriously impede the economic potential of women as business owners. This situation has a negative impact on their enterprises, productivity and competitiveness. It also reduces the growth potential of underdeveloped regions (Halkias *et al.,* 2011). Although recent scholarly research (e.g. Naegels *et al.,* 2018; Simba & Nziku, 2022) has called for gender equality in terms of access to resources, the ability of women to secure financial resources for their firms through regulated money lenders remains limited because of social biases surrounding gender (Koubâa, 2014). Even with the constant attention on gender issues (Dabić *et al.,* 2022), women entrepreneurs still face business investment challenges (Leitch *et al.,* 2018).

Irrespective of the subtleties of gender-based discrimination, business owners must engage in some form of lender-borrower relationship to secure a line of credit (Chakraborty & Hu, 2006). They must also sign contractual credit agreements (Besanko & Thakor, 1987) to support and promote the development of their businesses. As with agency theory (Jensen & Meckling, 1976; Ross, 1973), the principals are credit access facilitators who offer financial provisions (i.e. lenders). They can limit credit access through stringent parameters that deter potential beneficiaries (cf. N'Guessan & Hartarska, 2021). Such situations have profound theoretical and practical implications for businesses in general but particularly for SMEs in less-developed regions such as Africa (Brixiová *et al.,* 2020). Thus, using the stakeholder-agency theory of Hill and Jones (1992) helps discern the complexities that African manufacturing SMEs face in the process of seeking essential financial resources.

2.2 Credit access and lines of credit

Credit access as a component of business financing is often associated with business development or failure (Beck *et al.,* 2007; Beck *et al.,* 2011; Mach & Wolken, 2012; OECD, 2006). In the absence of financial provisions to support business development (Allen, 2016; Alvarez *et al.,* 2016; Burns, 2016), the probability that the process of starting, lunching and running a business (Marioti & Glackin, 2016; Scarborough & Cornwall, 2016) will be constrained multiplies (Wehinger, 2014). Access to credit offers businesses a lifeline by allowing them to pursue growth strategies (Inoue & Hamori, 2016; OECD, 2006). Likewise, the importance of a firm's access to external funds is emphasised

in the literature (Brixiová *et al.,* 2020). Such emphasis highlights the key role of external funding as a catalyst not only for market development but also for firm growth (Egger & Keuschnigg, 2017). Arguably, ease of access to finance has a direct correlation with firm size (in terms of both physical and financial assets), meaning that smaller companies find it more difficult to tap into external financing options (OECD, 2019). Research suggests that any institutional "restrictions on the amount of credit a business can obtain have a far–reaching effect" (Penrose, 1965, p. 219) on its survival, development strategies and ability to implement the business plan. Therefore, less surprisingly, SMEs in general constantly engage in several credit-seeking attempts (Kim, 2006). Accordingly, a line of credit is an important provision for businesses. Indeed, as a key enabler of credit access, a line of credit can unlock financial resources for many businesses, both large and small. As a financing provision offered by banks to businesses, it can give them access to scarce financial resources that are essential for their activities (Kuntchev *et al.,* 2013). Firms that use short-term bank loans often arrange for a line of credit (Chakraborty & Hu, 2006).

To ensure that a line of credit is used for short-term purposes, lenders often request that borrowers pay the line down to zero and hold the balance there for some period during the year. The literature identifies two main forms of lines of credit: long-term and short-term (Ayub, 2016). Difficulties in proving creditworthiness, inadequate credit history, high-risk premiums, underdeveloped bank-borrower relationships and high transaction costs make securing long-term lines of credit more difficult for small firms than large organisations (IFC, 2010). Such a situation leaves short-term provisions (lines of credit) as their primary route for accessing credit. Short-term lines of credit can be grouped into two main categories: committed and non-committed (Ayub *et al.,* 2016). Committed lines of credit are mainly based on the current assets of a business (Acharya *et al.,* 2020; Lins *et al.,* 2010). In contrast, non-committed lines of credit take the form of informal arrangements that allow firms to use credit facilities made available to them in line with a previously specified limit without going through the normal paperwork (Ayub *et al.,* 2016). These non-committed arrangements do not require the borrower to provide collateral (Acharya *et al.,* 2020; Mishkin & Eakins, 2005).

In light of this discussion of credit access and lines of credit, the picture in Africa seems somewhat fragmented, hence the unbalanced representation in the literature of credit access issues for African manufacturing SMEs. According to WBES data, only 22% of African enterprises have a loan or a line of credit (Triki & Faye, 2013). On average, half of the enterprises in Africa do not have access to formal credit or lack the appropriate financial products to grow and innovate (Beck & Cull, 2013; Demirguc–Kunt & Klapper, 2012a, b). This situation implies that only a small proportion of SMEs (around 29%) in the whole of Africa have a line of credit (Triki & Faye, 2013; Stein *et al.,* 2010). As previously argued, without the necessary financial resources or lines of credit, SMEs, especially in the manufacturing sector, will be unable to grow and continue to contribute positively to employment and economic growth in their countries (Beck *et al.,* 2011). WBES data reveal that, on average, only 15% of firms in fragile African states report having a loan or a line of credit from a financial institution (WBES, 2011). Thus, generating empirical evidence to understand the underlying factors that influence access to financial resources in Africa can inspire a more structured policy development agenda for small business and entrepreneurial financing.

3 Hypothesis development

Access to finance and the market has been described as a predominant challenge for SMEs (Msomi & Olarewaju, 2021). International institutions including the OECD, UN and World Bank have made considerable efforts to highlight the urgency of providing financial resources to support SMEs in developing countries (see OECD, 2021; UN, 2021; World Bank, 2022). Nevertheless, gaps still remain in the understanding of how lending institutions in Africa's financial markets interact with SMEs, especially in the continent's manufacturing sector. The limited knowledge of financial markets in Africa is scattered and fragmented. It also provides varying accounts of how SMEs access these markets (Beck, 2015). This fragmentation is partly due to the drastic changes that have occurred in Africa's financial systems in the past two decades, causing high market instability and imperfections (Beck & Cull, 2014). Therefore, to develop a deeper understanding of the factors that

influence SMEs in Africa's productive sectors such as manufacturing, this research is grounded in hypotheses of credit access based on associated constructs such as collateral security, collateral value and gender. These issues are considered inextricably linked to the African small business context. As argued, the African context is distinct enough to offer novel theorisations of entrepreneurial financing.

3.1 Collateral, collateral security and credit access

Collateral denotes the assets to which borrowers commit to a lender as security for a debt payment (Gitman, 2003). Collateral serves two purposes.

It provides a route to finance, whilst it can be used as an effective deterrent for borrowers not to engage in risky behaviours, including asset substitution and ex post moral hazard given the fear that the pledged collateral will be seized and liquidated (Mathur & Marcelin, 2014). Its use has developed into a common feature of credit contracts and negotiations between firms and lending institutions (Steijvers & Voordeckers, 2009). However, limited access to external financial resources and a lack of tangible assets as collateral have proved major obstacles to many firms (Egger & Keuschnigg, 2017; Hanedar *et al.,* 2014).

The literature on small business and entrepreneurial financing highlights several problems related to credit access. These problems include lack of collateral, an inability to comply with bureaucratic procedures and (financial) illiteracy (see also Dinh *et al.,* 2012; Fowowe, 2017; Meenakshi *et al.,* 2011). The literature offers two noteworthy views on why collateral may affect a firm's access to credit (Bopaiah, 1998). First, collateral is seen as an instrument for lenders to gauge the safety of their investments (Besanko & Thakor, 1987). Second, it is used as an insurance policy, which banks need to give them some recourse in case of default of risky borrowers (Bopaiah, 1998; Brei *et al.,* 2020). From that perspective, collateral has undoubtedly been applied as a mechanism for reducing the risk of adverse selection and moral hazard (Abdallah, 2016; Matthews & Thompson, 2008; Williams, 2017).

In the absence of information sharing (Beck *et al.,* 2011; Biekpe, 2004; Duarte *et al.,* 2017), which is known to be prevalent in Africa (WBES, 2011), collateral can reduce what Williams (2017) refers to as moral hazard. As part of a borrowing firm's commitment to meeting its debt obligations, banks require that the firm pledges an amount equivalent to the value of the loan that it can forfeit in the event of default (Love *et al.,* 2016). In underdeveloped financial markets, collateral security is seen as a binding constraint on business financing (Liberti & Mian, 2010). Menkhoff et al. (2012) studied collateral security and its substitutes in emerging market lending, confirming that, due to opaque information and weak enforcement in emerging loan markets, the need for collateral security is high but that borrowers often lack adequate assets to pledge as collateral.

Furthermore, in a multivariate study of how collateral registers can work as a bridge to access bank financing, Love *et al.,* (2016) found that firms perceived insufficient, unacceptable or unsuitable collateral as the main reason they could not access financing. Despite the arguments from these studies, decisions regarding what level of collateral is required or whether to take collateral are unclear and unscientific (Hanley, 2002).

Because of the indivisible nature of collateral, lenders may struggle to match the level of collateral to the level of borrowing (Hanley, 2002). Therefore, following this logic, collateral may be undervalued or overvalued. In the case of manufacturing SMEs in regions such as Africa, which is known to have information asymmetries (Duarte *et al.,* 2017; WBES, 2011) and less developed or dysfunctional credit systems (Issahaku, 2019; Sacerdoti, 2005), access to finance can be a major challenge that requires policy-driven solutions. Thus, differences in institutional arrangements and financial markets between developed and developing countries mean that more research on credit access issues is required. This need is particularly acute in the context of Africa (Abor & Biekpe, 2009), where SMEs are the key economic agents. Based on this discussion, the following hypothesis is formulated:

> ***H1:*** *In Africa, owners of manufacturing SMEs that possess collateral security perceive access to credit as less difficult. Consequently, they are more inclined to apply for credit, which they then use to develop their businesses.*

3.2 The value of collateral and credit access

Prior research suggests that pledging collateral is an effective mechanism that banks, and lending institutions use to assure themselves of a certain value in the future (Rahman *et al.,* 2017; Voordeckers & Steijvers, 2006). A company may not retain its value in the long term, but collateral will most likely retain its value (Duarte *et al.,* 2017; Mann, 1997; Santos *et al.,* 2021). Arguably, the value of collateral is a decreasing function of time to maturity (Stulz & Johnson, 1985). Often, the initial value of collateral will have a significant positive influence on the recovered value of collateral, whatever the type of security pledged on borrowings (Amoako–Adu & Eshun, 2018; Blazy & Laurent Weill, 2013).

The theoretical paper by Mathur and Marcelin (2014) focused on the association between collateral coverage, country-level governance and various institutional proxies. The conclusion was that, despite great strides in reforming collateral laws in recent years, collateral-to-loan value appears to be the single biggest barrier to finance. Indeed, because of the possibility that borrowers suffer fluctuations in their credit availability, the values of their securable assets may vary, particularly for loans secured by accounts receivable or inventory (Berger *et al.,* 2010). Studying the determinants of collateral, Jimenez et al. (2006) explained the notion of collateral value more fully. They stressed that the amount of collateral in each loan is an increasing function of the real risk *less* the interest rate (to limit the increase in the cost of the loan and to cope with the moral hazard associated with high interest rates). Likewise, it may also be a decreasing function of the dissipative cost of the collateral—at that point, the collateral is worth more to the bank, and less collateral will be needed to break even, and of the size of the loan, larger projects increase the pay-off to the borrower in good states (Jimenez *et al.,* 2006).

These theoretical views on collateral depict an established measure of the value of collateral (see also Chakraborty & Hu, 2006; Jimenez *et al.,* 2006; Ono & Iichiro, 2009; Ortiz & Penas, 2008). Despite this extensive literature permeating the bulk of studies of business financing, there is a shortage of research on the interplay between credit access and factors determining credit access in Africa, particularly in the context of manufacturing SMEs. Moreover, research has yet to provide insights into how the owners of manufacturing SMEs perceive the value of collateral security as a factor in obtaining credit. Accordingly, the following hypothesis is formulated:

> ***H2:*** *Owners of African manufacturing SMEs perceive high-valued collateral as an obstacle constraining their access to credit. However, they work hard to increase the value of their assets (physical and financial) to use them when applying for credit, even if their success rates vary because of the subjectivity of collateral value in Africa.*

3.3 Gender and credit access

Research on the developing world acknowledges that women-owned businesses face barriers to accessing formal lending services. Moreover, the obstacles they encounter are much more pronounced than those facing their male counterparts (Chaudhuri *et al.,* 2020). Similar to the situation faced by businesswomen in Asia (see Wellalage & Locke, 2017), businesswomen in Africa are far behind men in terms of basic human rights and are much less on an equal footing with men in economic activities (Asiedu *et al.*, 2013; Seema *et al.,* 2021). In addition, the fact that research in Africa is still trying to break the glass ceiling by advocating for equal access to financial resources for male- and female-owned businesses suggests that women are still marginalised in the context of financial services, particularly credit access (cf. Asongu *et al.,* 2020). The literature on business and finance indicates that, in the developing world, women-owned businesses encounter more systemic barriers to access to financial services, with finance being the most difficult resource for them to access (Wellalage *et al.,* 2013; Richardson *et al.,* 2004). Arguably, these findings offer further evidence that gender bias in Africa still exists and that it is heavily skewed against women.

They also suggest that, in financial services, it severely restricts the availability of financial service provisions for women to draw on for business support (Asiedu *et al.*, 2013; Meniago & Asongu, 2018). Thus, in the context of Africa, gender plays a central role in whether women can access credit (Seema *et al.,* 2021).

This discussion implies that gender discrimination in credit access is pronounced, especially in Africa. Research has shown that, in general, SMEs with

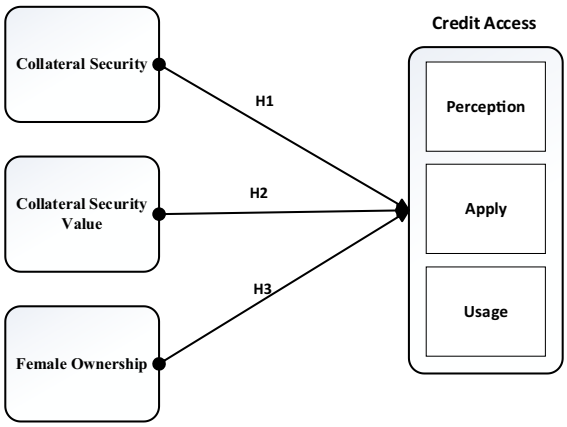

Fig. 1 Validated model for African SMEs

female ownership are overly assessed for suitability (Le & Stefańczyk, 2018). Elsewhere, from a demand perspective, research suggests that women are evaluated in relation to their propensity to take business risks. Their risk-averse attitude is cited as a drawback that often prevents them from securing credit (Karimu *et al.,* 2021; Stefani & Vacca, 2015). Also, compared to men, women in Africa are often judged for their suitability as borrowers on the basis of their formal qualifications (Aterido *et al.,* 2013). Because most of them lack formal qualifications, their chances of securing credit are severely constrained. From that perspective, based on this discussion, the following hypothesis is presented:

> ***H3:*** *Gender biases in Africa influence women's access to credit facilities. Women owners of African manufacturing SMEs often perceive access to credit as difficult and are largely dissuaded from applying for credit. Hence, they are less likely to obtain it.*

3.4 Validated model

The credit access model for SMEs in Africa (Fig. 1) illustrates that collateral security, the value of collateral security and gender constitute the core variables that determine credit access in the manufacturing sector in Africa. Although collateral security and the value of collateral security are considered standard parameters for accessing financial service provisions in industrialised economies (Zhang, 2021), in Africa, their use is subject to the lender. It consequently constrains SMEs (Yartey, 2011). This constraint is exacerbated by information asymmetry, poor record keeping and underdeveloped financial systems (Yülek & Yeda, 2018). Regarding the gender of SME owners, several factors are at play. The assumptions behind Fig. 1 are that social biases and cultural norms embedded in most African countries restrict the ability of businesswomen who own manufacturing SMEs to access financial resources (cf. Seema *et al.,* 2021). Such prejudices have a negative impact on their ability to establish essential lines of credit for their manufacturing businesses (Karimu *et al.,* 2021).

To explore the interplay between credit access (dependent variables), collateral security, collateral security value and gender (independent variables), these variables were statistically tested using regression and logit techniques. The results are presented later. However, to determine whether such a pattern is widespread across all of Africa's business sectors, further empirical inquiry is required.

4 The empirical method

4.1 Data

The hypotheses were tested using data provided by the World Bank Enterprise Surveys (WBES, 2016). In total, 13,783 manufacturing SMEs from 41 countries in Africa were included in the study. The WBES data set is administered by the World Bank to gauge the investment climate in many economies worldwide to improve people's understanding and firms' behaviour. The data set comprises a wide array of data from 174,000 firms in 151 countries. For this study, the most recent data (collected in 2016) were used. The WBES are administered by local staff based on one-on-one interviews with firm representatives, who are usually top managers or functional managers who are knowledgeable about the firm's overall operations. The use of local staff as survey administrators suggests that the interviewers are familiar with the local language and culture. Given its rigorous approach and resulting reliability, the WBES data set has been used widely in economics and strategic management studies (e.g. Harrison *et al.,* 2014; Mitton, 2016, Tajeddin & Carney, 2019).

Table 1 Construct measurement

	Variable	Questions	
Dependent variable	Credit perception	K.30. Is access to finance, which includes availability and cost, interest rates, fees and collateral requirements "no obstacle", "a minor obstacle", "a moderate obstacle", "a major obstacle" or "a very severe obstacle" to the current operations of this establishment?	WBES (2016)
	Credit application	K.16. Has this establishment applied for any loans or lines of credit?	WBES (2016)
	Credit use	K.8. At this time, does this establishment have a line of credit or a loan from a financial institution?	WBES (2016)
Independent variable	Collateral security	K5a. What was the percentage of fixed assets funded by internal funds/retained earnings in the last fiscal year?	WBES (2016)
	Collateral security Value (log)	K.15a. Referring only to this most recent line of credit or loan, what was the approximate value of the collateral required?	WBES (2016)
	Female owner	B.3b. Is the largest owner a woman? (Yes = 1, No = 0)	WBES (2016)
Control variables	Experience	B.7. How many years of experience working in this sector does the top manager have?	WBES (2016)
	Firm age (log)	B.5. In what year did this establishment begin operations? (Year of interview)	WBES (2016)
	Export	D3c. What percentage of this establishment's sales were direct exports?	WBES (2016)
	Quality certificate	B.8. Does this establishment have an internationally recognised quality certification? (Yes = 1, No = 0)	WBES (2016)
	Corruption	J.30. Please look at this card and tell me if you think that each of the following factors that can affect the current operations of a business is "no obstacle", "a minor obstacle", "a moderate obstacle", "a major obstacle" or "a very severe obstacle" to the current operations of this establishment:	WBES (2016)
	Education	L.10. Does this establishment have formal training programs for its permanent, full-time employees? (Yes = 1, No = 0)	WBES (2016)

4.2 Variables

4.2.1 Dependent variable

Following Hansen and Rand (2014a, b), three separate variables from the data set were used to represent credit access (see Table 1). First, SME owners' perceptions of credit access were considered. The WBES ask managers to evaluate the difficulty of access to finance, including availability and cost, interest rates, fees and collateral requirements (K30, from Africa WBES, 2016). This variable is measured on a five-point Likert scale, ranging from 0 (*no obstacle*) to 4 (*very severe obstacle*). The question is a subjective indicator from an SME owner's perspective.

To measure the manager's practice of getting credit, two additional, more objective dependent variables were used. Whilst subjective variables provide information about what the owner of an SME perceives, objective variables reflect their experiences (Aterido *et al.,* 2011; Bertrand & Mullainathan, 2001; Bouton & Tiongson, 2010). Self-reported data on the owner's use of credit were gathered, as was credit application information to provide a broader picture of the process of obtaining credit by sub-Saharan SMEs. In the case of an SME's use of credit, information about an SME's use of a line of credit was taken as a measure of financial access. Regarding credit application information, a binary variable was used, taking the value 1 if an SME had applied for a loan, and 0 otherwise. The WBES specifically ask, "Did this establishment apply for any loans or lines of credit?" (K16, WBES, 2016). To measure the outcome of the application for credit, a binary variable

from the WBES data set was used. This variable took the value 1 when a firm had access to credit (i.e. had received a line of credit), and 0 otherwise. The specific question is "Does this establishment have a line of credit or a loan from a financial institution?" (K8, WBES 2016).

4.2.2 Independent variables

The independent variables were owner's gender, collateral security and the value of collateral security. For the main explanatory variable, collateral security was measured by the percentage of fixed assets owned by the firm and the value of these assets (Q K5a, WBES 2016). SMEs that own more of the assets in the business are more likely to access external finance (Beck *et al.,* 2004). Financial constraints are further reduced when the assets used for collateral are of greater value (Chaney *et al.,* 2012). The value of requested collateral was measured as a factor altering the constraints to credit access by asking managers the following question: "Referring only to this most recent line of credit or loan, what was the approximate value of the collateral required?" (K15a, WBES 2016). Finally, the owner's gender was a binary indicator that took the value 1 when the business owner was a woman, and 0 otherwise (Qb3b, WBES, 2016). Studies elsewhere have shown that women-owned businesses are constrained in terms of access to credit, whereas others suggest that these results depend on the size of the business and the choice of credit constraint measure (Asiedu *et al.,* 2013; Hansen & Rand, 2014a, 2014b).

4.2.3 Control variables

The control variables were experience, firm age, education, exports, institutions and accreditation. Experience was operationalised as the natural log of the number of years the owners had been in the business. The more years accrued by the owner, the more knowledge they were likely to have. This accumulated knowledge can positively influence the outcome of business activity and hence make the business more creditworthy (Kim, 2006). The firm's age variable was the natural log of the number of years the SME had been operating in the business environment. SMEs that have been in existence for long usually form long-term relationships, which, in financial environments, denote that they are safe to provide with credit, all else being equal (Rahman *et al.,* 2017). Education was also controlled for and was measured by asking whether the SMEs had formal training programmes for their permanent full-time employees. SMEs' attention to education implies a better understanding of how the business environment works. Exports were included to capture the way in which international business by SMEs altered their credit constraints. Similarly, business accreditation was used in reference to their access to finance. Finally, the analysis controlled for institutions using a corruption variable. This variable was deduced from questions on whether corruption posed an obstacle for an SME's access to finance (Beck & Demirguc–Kunt, 2006).

4.3 Data analysis

To examine the effects of these three key factors on perceptions of credit access, credit applications and credit use, a logit model was used for estimation. This choice of model was because the dependent variables were not continuous. Hence, the use of standard efficient ordinary least squares (OLS) would have yielded biased estimates. Thus, using a logit model helped produce efficient estimates based on the response probabilities for both continuous and discrete explanatory variables (Wooldridge, 2010). The indicator for credit access was proxied by variables measuring credit constraints (Hansen & Rand, 2014a, b; Wellalage & Locke, 2016). The models are described in the following equations, where α is a constant, β is the coefficient vector and ϵ is the error term. Finally, the model equation also included a set of country fixed effects.

(1a) Credit Access Perception = α + β Collateral Security + β Collateral Security Value + β Female Ownership + β Control Variables + Ɛ
(1b) Credit Access Perception = α + β Collateral Security + β Collateral Security Value + β Female Ownership + β Control Variables + fixed effects + Ɛ

(2a) Credit Application = α + β Collateral Security + β Collateral Security Value + β Female Ownership + β Control Variables + Ɛ
(2b) Credit Application = α + β Collateral Security + β Collateral Security Value + β Female

Ownership + β Control Variables + fixed effects + Ɛ

(3a) Credit Utilise = α + β Collateral Security + β Collateral Security Value + β Female Ownership + β Control Variables + Ɛ
(3b) (2b) Credit Utilise = α + β Collateral Security + β Collateral Security Value + β Female Ownership + β Control Variables + fixed effects + Ɛ

5 Results

Descriptive statistics appear in Table 1 to illustrate the variables used in the baseline regression. The SMEs in the data set perceived credit access as a moderate obstacle, indicating that most had difficulties accessing credit. This conclusion is supported by the low number (about 31%) of SMEs that applied for credit of any type. However, SMEs who were successful in accessing credit or were deemed creditworthy by lending institutions made good use of the credit that was made available to them. In the data set, approximately 80% of these SMEs used some form of credit facility. Also, the analysis considered attributes (e.g. high education qualifications) that were deemed important for SMEs because they were considered essential by lending institutions. Such attributes significantly increased SMEs' chances of securing credit from lending institutions in Africa.

In the case of gender variance, only 15% of these SMEs had female owners. On average, individuals who managed SMEs in the manufacturing sector in Africa had 15 years of experience. Regarding education, 14% of SMEs provided formal training for their employees. Similarly, firm characteristics were important determinants of credit access (Wellalage & Locke, 2017). Notably, 14% of the SMEs in the data set had a quality certification for their products. Such a certification was considered reliable assurance for lending institutions. The quality certification provided SMEs with a soft guarantee of their business activities across 41 African economies. However, the volume of products exported to other markets by these SMEs was small. The average age of the SMEs in the data set was 13 years. Half (50%) of them had assets that they could use as collateral, but less than 50% had a very high collateral value. Moreover, a large proportion (70%) of SMEs expressed corruption as a major concern.

To establish the extent of the relationship between the variables in the model, correlation analysis was used. Table 2 illustrates the results. Each correlation between variables is supported by a level of significance to confirm the statistical significance of the relationship between variables. Most of the correlation coefficients presented in the table are significant. In addition, the size of the coefficients is moderate in most cases. Accordingly, there are no likely issues of multicollinearity amongst the variables. Multicollinearity can affect the outcome of the estimation and its corresponding interpretation. Also, issues of endogeneity are less severe when there is no multicollinearity (Hoffman, 2010; Mela & Kopalle, 2002). There is a positive relationship between the three indicators of credit access (perception, application and use). Also, there is a positive relationship between the indicators of credit access and collateral security and between credit access and collateral security value.

H1: In Africa, owners of manufacturing SMEs that possess collateral security perceive access to credit as less difficult. Consequently, they are more inclined to apply for credit, which they then use to develop their businesses. The results of the logit model are presented in Table 3. The probability of an SME being creditworthy was estimated using explanatory variables identified through comprehensive analysis of the literature as determinants of credit constraints. The first column of Table 3 illustrates that SMEs with higher collateral security have fewer credit constraints ($\beta = -0.001$, $p < 0.01$, Model 1a). Accordingly, these SMEs with higher collateral security tend to apply for credit ($\beta = 0.004$, $p < 0.01$, Model 2a).

As expected, financial institutions only offer credit in cases where they can secure the loan against an asset that they can repossess to redeem their losses in case of default. This credit constraint is amplified in the case of developing countries, where financial institutions suffer from a lack of information in the form of information asymmetry (Duarte *et al.,* 2017). It is also compounded by the business environment, which is typically dominated by dysfunctional financial systems, poor governance and a lack of legal institutions (Menkhoff *et al.,*

Table 2 Descriptive analysis

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	Experience	15.47	10.68	1.00											
2	Firm age (log)	2.60	0.01	− 0.397*	1.00										
3	Export	2.70	12.28	0.029*	− 0.037*	1.00									
4	Quality certificate	0.14	0.45	0.069*	− 0.085*	0.062*	1.00								
5	Corruption	2.41	1.02	0.022*	− 0.007	0.011	0.013*	1.00							
6	Education	0.14	0.22	0.035*	− 0.118*	0.074*	0.123*	− 0.018*	1.00						
7	Collateral security	52.86	48.99	0.176*	− 0.211*	0.040*	0.097*	0.036*	0.045*	1.00					
8	Collateral security value (log)	1.40	0.490	0.002	0.050*	− 0.032*	− 0.064*	0.004	− 0.149*	− 0.037*	1.00				
9	Female owner	0.14	0.22	− 0.002	− 0.08	0.049*	0.032*	-0.025*	0.091*	− 0.004	− 0.061*	1.00			
10	Credit perception	1.88	1.44	− 0.034*	0.056*	− 0.022*	− 0.067*	− 0.112*	− 0.047*	0.083*	0.033*	0.029*	1.00		
11	Credit application	0.31	0.46	− 0.113*	0.098*	− 0.036*	− 0.074*	− 0.084*	− 0.063*	0.131*	0.076*	− 0.007	0.009	1.00	
12	Credit use	0.79	0.40	− 0.034*	0.106*	− 0.032*	− 0.095*	0.009	− 0.179*	0.078*	0.108*	− 0.101*	0.292*	0.120*	1.00

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

2012). Thus, there is little trust of recovering a loss if a loan default must be settled in court. Despite having more collateral security, these SMEs do not use credit or any type of loan ($\beta = 0.000$, $p > 0.1$).

This result suggests that these SMEs can rely on their assets and have less need for loans and credit. Thus, the first hypothesis is supported for credit perception and credit application, but not for credit use.

H2: Owners of African manufacturing SMEs perceive high-valued collateral as an obstacle constraining their access to credit. However, they work hard to increase the value of their assets (physical and financial) to use them when applying for credit, even if their success rates vary because of the subjectivity of collateral value in Africa. In testing H2, the analysis shows that collateral security value explains credit application ($\beta = 0.317$, $p < 0.01$, Model 2a) and credit use ($\beta = 0.434$, $p < 0.01$, Model 3a), but not credit perception. Despite more credit constraints when the required collateral security is high, there is no significant impact ($\beta = 0.038$, $p > 0.1$, Model 1a). Therefore, H2 is almost fully supported.

H3: Gender biases in Africa influence women's access to credit facilities. Women owners of African manufacturing SMEs often perceive accessing credit as difficult and are largely dissuaded from applying for credit. Hence, they are less likely to obtain it. To test H3, the first set of equations (a) in Models 1a, 1b, and 1c were used (Table 3). The results show that female owners of SMEs perceive financial institutions in relation to credit access as an obstacle ($\beta = 0.125$, $p < 0.01$, Model 1a) and do not benefit from credit or loans accordingly ($\beta = -0.391$, $p < 0.01$, Model 3a). This finding raises concerns about the impact of gender inequality, especially in the developing world, where women are overlooked or considered incapable, limiting their access to financial facilities (Wellalage & Locke, 2017).

The relationship between female ownership and credit application was expected to be negative due to the high credit constraints perceived by women. However, the results show a non-significant positive link ($\beta = 0.014$, $p > 0.1$, Model 1a). Such an outcome

Table 3 Determinants of credit access, application and use

Variable	Credit perception		Credit application		Credit use	
	Model 1		Model 2		Model 3	
	Log (1a)	*Log (1b)*	*Log (2a)*	*Log (2b)*	*Log (3a)*	*Log (3b)*
	Coeff.	*Coeff.*	*Coeff.*	*Coeff.*	*Coeff.*	*Coeff.*
Experience	− 0.000	0.002	− 0.016***	− 0.013***	0.002	0.005**
Firm age (log)	10.825***	6.623**	10.294***	3.815	3.307	− 1.662
Export	0.004***	0.004***	− 0.002	− 0.002	0.002	0.002
Quality certificate	− 0.075***	− 0.046**	− 0.093**	− 0.027	− 0.103***	− 0.073***
Corruption	− 0.138***	− 0.135***	− 0.135***	− 0.130***	0.060***	0.066***
Education	− 0.216***	− 0.139***	− 0.292***	− 0.197***	− 0.467***	− 0.383***
Collateral security	− 0.001***	− 0.000	0.004***	0.003***	0.000	− 0.001
Collateral security value (log)	0.038	− 0.030	0.317***	0.197***	0.434***	0.346***
Female owner	0.125***	0.128***	0.014	0.016	− 0.391***	− 0.393***
		Size fixed effects		Size fixed effects		Size fixed effects
Constant	− 81.121***	− 49.373**	− 79.426***	− 30.604	− 26.120	11.408
Pseudo *R*-squared	0.167	0.167	0.140	0.140	0.0819	0.0819

confirms that some female owners now feel confident and are convinced that they can approach a financial institution and apply for credit or loans, despite inequality in the system. This relative shift reveals a promising future in sub-Saharan Africa. Thus, H3 is almost fully supported. There is a significant negative relationship between corruption and credit perception, confirming the estimation. In the case of education, there is a negative relationship with credit perception. Firms that run formal training programmes and provide a high level of education are likely to have a better experience in establishing a line of credit because financial institutions equate high educational attainment to a high level of knowledge in running a business. Thus, such SMEs perceive fewer credit access constraints.

Interestingly, having a sophisticated firm in the form of commitment to education and training does not encourage firms to apply for credit and obtain financing. Furthermore, firms that have an international certification for their business or product have fewer credit constraints. However, such credentials do not boost their chances of being successful in their applications. To demonstrate the reliability (robustness) of these results, the analysis controlled for business type and country fixed effects by adding them to the first set of equations (a). The results of these estimations are presented in the second column (b) of all three models in Table 3. They show consistent results for collateral, collateral value and female ownership. Thus, this extra test confirms that the results are robust.

6 Discussion

6.1 Contributions

In response to a lack of insights into contextual credit access issues constraining SMEs in Africa, this study's comprehensive analysis of entrepreneurship and SME financing advances the scholarly dialogue. Focusing on the cross-fertilisation between entrepreneurship, entrepreneurial financing and SMEs, the study makes theoretical, empirical and practical contributions with policy implications. Theoretically, new theorisations are provided regarding credit access for African manufacturing SMEs. The stakeholder-agency theory of debt financing is used in such a way as to extend its application. The literature is advanced by elaborating on the impact of the measures that African lenders use when assessing the creditworthiness of SMEs. The overlay between collateral security, collateral security value and gender on the one hand and credit access on the other provides new theorisations depicting the relationship

between SMEs and lenders in the financial markets found in many parts of the developing world. This overlay amounts to involuntary financial exclusion (Wasiuzzaman & Nurdin, 2019). Transaction lending based on credit ratings or the value of a firm's assets (Van Caneghem & Van Campenhout, 2012) has limited application in relation to credit access by SMEs in Africa because of Africa's reported market imperfections, policy gaps (UN, 2021), institutional voids (Dekel–Dachs *et al.,* 2021), information asymmetry issues (Beck *et al.,* 2007; Beck *et al.,* 2009) and gender biases (Bullough *et al.,* 2022).

Based on arguments about the usability of transaction lending in Africa, this study provides an indigenous understanding with contextual sensitivity. The position expounded in this paper advances knowledge in line with the recently revisited debate on contextualising entrepreneurship and management research (see Bruton *et al.,* 2022; Filatotchev *et al.,* 2022; Hamann *et al.,* 2020) that was brought to light by Zahra (2007) and Welter (2011). In some sense, this study shows that African contexts are distinct enough to require indigenous theorisations to foster contextual reflection in the theorising process.

Empirically, the study confirms that collateral security, collateral security value and gender biases embedded in Africa's financial markets not only reduce the ability of owners of SMEs to access credit but also have knock-on effects on their perceptions of their likelihood of obtaining funds for business ventures. Observations of 13,783 SMEs in 41 African economies reveal a distinct pattern, highlighting reduced motivation amongst SME owners to apply for and obtain credit as a result of expected outcomes. Thus, in the context of Africa, the use of transaction lending measures has profound implications for business development and decision making for SMEs owners.

Practically, limiting access to credit through harsher credit requirements on the basis of gender remains a concern (Seema *et al.,* 2021). In African SMEs with female ownership, establishing lines of credit poses more of a challenge. Cultural and social assumptions embedded in African societies seemingly magnify gender biases, which significantly afflicts businesswomen in many parts of the continent (Le *et al.,* 2018). Such a situation only deepens financial exclusion, especially for female-owned SMEs in the region, limiting their participation in the social and economic spheres. Because of social views about women, it is conceivable that businesswomen who own manufacturing businesses experience sceptical, prevention-focused questions in their applications for credit (cf. Kanze *et al.,* 2018). Research suggests that, in general, businesswomen encounter stricter credit approval processes, higher interest rates and lower loan ceilings when they apply for business investments through regulated financial services (Cozarenco & Szafarz, 2018). Africa has many gender-related issues in relation to regulatory institutions (e.g. policies and laws) and normative institutions (e.g. cultural expectations). These issues are subtle and hard to detect at the surface and are ingrained in commonly accepted social rules, norms and practices (Brush *et al.,* 2019; Bullough *et al.,* 2022).

6.2 Policy implications and recommendations

In addition to developing new theorisations, the present analysis of entrepreneurship and SME financing has policy, business and social implications. For policy institutions, the findings can stimulate debate on entrepreneurship policy, institutional and financial service reforms. To address the situation facing African manufacturing SMEs, governments and formal institutions in 41 countries, including global institutions such as the World Bank and non-governmental organisations (NGOs), this study reveals the need to come together to find ways of reconciling existing support mechanisms with the financial demands of SMEs (cf. Aggarwal & Goodell, 2014). Moreover, this study provides SMEs not only in the manufacturing sector but also in other industries with knowledge about the parameters used in transaction lending in many financial markets. Such insights can inform their business funding strategies.

An important implication of this research relates to the involuntary financial exclusion of SMEs by lending institutions. This exclusion limits their access to finance and financial services through universally applied credit assessment measures that are not only blind to context but also have severe economic and social implications for SMEs. Also, gender biases in the financial markets deepen inequalities in society. Considering the above, several recommendations can be proposed. First, African governments should establish joint private partnerships to work collaboratively with investors, including NGOs, banks,

financial services and lending institutions. Doing so could lead to the reform of financial markets in such a way that would not limit SMEs' access to credit on the basis of size and limited liability. The growth potential and role of SMEs as agents of economic and social change should form core components of how they are assessed for funding. Moreover, African governments should offer grant provisions through dedicated government bodies in a more targeted fashion.

Second, key policy-making institutions in these African countries should work towards policies that prioritise productive sectors, including manufacturing, in terms of their financial needs. Such policies should eliminate widely reported distortions in the financial markets by reconciling entrepreneurship policies with business needs, especially for key sectors. This approach would address agency problems derived from biases about borrowers and their businesses, as well as conflicts of interest between borrowers and lenders (Kautonen *et al.,* 2020) in Africa's financial markets. Thus, the issue of involuntary financial exclusion for SMEs in the continent can be alleviated to a considerable degree.

Third, entrepreneurship or financial policies should be implemented in a way that encourages wider participation in economic development by involving all citizens. Policy-makers should aim to eliminate gender biases to widen participation and financial access for business. In a sense, such efforts would have a social impact in Africa by enabling the continent to move towards developing equal societies, whilst creating decent employment for all, in line with the UN's SDGs.

6.3 Research limitations and future research opportunities

Like any research, this study has limitations. For example, the decision to focus on manufacturing businesses in 41 African countries led to the omission of 13 countries. A wider sample transcending the sub-Saharan African region would have provided more insights into entrepreneurial financing and the entrepreneurial phenomenon unfolding within the continent's most productive sector. Moreover, despite being a cross-country study of Africa, the study suffered from limitations derived from the WBES data set. The data set prevented the study of the effect of other potentially relevant individual-level factors on credit access. Also, the narrow focus on the manufacturing sector provides only a partial picture of the African financial markets. Other types of sectors such as the informal economy, whose businesses support many livelihoods in Africa, may experience far greater challenges in seeking credit to support their business activities.

Research suggests that small businesses often engage in several credit-seeking events because of the difficulties they face when seeking credit (Kim, 2006). However, more clarity is needed in terms of these credit-seeking events. This lack of clarity in the literature provides an avenue for future research. Therefore, scholars should consider exploring the possibilities of African solutions that enable manufacturing SMEs, firms in the informal economy or companies in any other sector to access finance for their business ventures. Insights from such research could provide missing pieces of the puzzle about emerging entrepreneurial financing alternatives for SMEs in financial markets such as those discussed in this paper.

7 Conclusions

Why do African SMEs struggle to obtain credit? Based on the current study, the answer seems to be that the criteria used by financial lenders to assess credit applications are problematic. The empirical results of this study confirm a tenuous relationship between financial lenders and SMEs in many African countries.

The use of collateral security, collateral security value and gender biases embedded in Africa's financial markets not only reduces credit access potential but also undermines perceptions of the likelihood of obtaining credit for business purposes. Africa is characterised by institutional and market imperfections, along with uncoordinated domestic policies. In this context, transaction lending based on credit ratings and collateral has limited applicability. When universal application of transaction lending is combined with gender biases, it often amounts to the involuntary financial exclusion of SMEs, which has far-reaching policy implications. In conclusion, an important message that can be derived from this empirical study is that the explanatory power of the stakeholder–agency theory of debt financing is

enhanced when combined with contextual analysis of entrepreneurship and SME financing.

References

Abdallah, A. H. (2016). Agricultural credit and technical efficiency in Ghana: Is there a nexus? *Agricultural Finance Review, 76*(2), 309–324.

Abor, J., & Biekpe, N. (2009). How do we explain the capital structure of SMEs in sub-Saharan Africa? *Journal of Economic Studies, 36*(1), 83–97.

Acharya, V., Almeida, H., Ippolito, F., & Orive, A. P. (2020). Bank lines of credit as contingent liquidity: Covenant violations and their implications. *Journal of Financial Intermediation, 44*, 100817. https://doi.org/10.1016/j.jfi.2019.03.004

Aggarwal, R., & Goodell, J. W. (2014). Cross-national differences in access to finance: Influence of culture and institutional environments. *Research in International Business and Finance, 31*, 193–211. https://doi.org/10.1016/j.ribaf.2013.09.004

Allen, K. R. (2016). *Launching new ventures: An entrepreneurial approach. Cengage Learning*. USA.

Alvarez, S. A., Audretsch, D., & Link, A. N. (2016). Advancing our understanding of theory in entrepreneurship. *Strategic Entrepreneurship Journal, 10*(1), 3–4.

Amoako-Adu, B., & Eshun, J. P. (2018). SME financing in Africa: Collateral lending vs cash flow lending. *International Journal of Economics and Finance, 10*(6), 111–123.

Aterido, R., Hallward-Driemeier, M., & Pagés, C. (2011). Big constraints to small firms' growth? Business environment and employment growth across firms. *Economic Development and Cultural Change, 59*(3), 609–647.

Aterido, R., Beck, T., & Iacovone, L. (2013). Access to finance in Sub-Saharan Africa: is there a gender gap? *World development, 47*, 102–120.

Ayub, S., Byaruhanga, J., & Okhaso, O. G. (2016). Effect of bank credit facilities on the growth of small and medium enterprises in Kakamega county, Kenya. *International Journal of Management Research and Reviews, 6*(5), 597–611.

Asiedu, E., Kalonda-Kanyama, I., Ndikumana, L., & Nti-Addae, A. (2013). Access to credit by firms in Sub-Saharan Africa: How relevant is gender? *American Economic Review, 103*(3), 293–297.

Asongu, S. A., Nnanna, J., & Acha-Anyi, P. N. (2020). Inequality and gender economic inclusion: The moderating role of financial access in Sub-Saharan Africa. *Economic Analysis and Policy, 65*, 173–185. https://doi.org/10.1016/j.eap.2020.01.002

Beck, T. (2015). Cross-border banking and financial deepening: The African experience. *Journal of African Economies, 24*(suppl_1), i32–i45.

Beck, T., & Cull, R. (2014). Banking in Africa. In A. Berger, P. Molyneux, & J. Wilson (Eds.), *Oxford Handbook of Banking* (2nd ed.). Oxford University Press.

Beck, T., Maimbo, S. M., Faye, I., & Triki, T. (2011). *Financing Africa: Through the crisis and beyond*. New York: USA. The World Bank.

Beck, T., Demirgüç-Kunt, A., & Honohan, P. (2009). Access to financial services: Measurement, impact, and policies. *The World Bank Research Observer, 24*(1), 119–145.

Beck, T., Demirgüç-Kunt, A., & Peria, M. M. S. (2007). Reaching out: Access to and use of banking services across countries. *Journal of Financial Economics, 85*(1), 234–266.

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2004). *Law and firms' access to finance*. New York: USA. The World Bank.

Beck, T., Cull, R. (2013). Banking in Africa. Policy Research Working Paper 6684. The World Bank. Available at: https://openknowledge.worldbank.org/. Accessed on 20.02.2020.

Beck, T., & Demirgüç-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking and Finance, 30*(11), 2931–2943.

Berguiga, I., & Adair, P. (2021). Funding female entrepreneurs in North Africa: Self-selection vs discrimination? MSMEs, the informal sector and the microfinance industry. *International Journal of Gender and Entrepreneurship, 13*(4), 394–419.

Besanko, D., & Thakor, A. V. (1987). Collateral and rationing: Sorting equilibria in monopolistic and competitive credit markets. *International Economic Review, 28*(3), 671–689.

Berger, A., Frame, N., Scott, W., & Ioannidou, V. (2010). *Tests of ex ante versus ex post theories of collateral using private and public information, Working Paper, No. 2010-6*. Federal Reserve Bank of Atlanta.

Bertrand, M., & Mullainathan, S. (2001). Do people mean what they say? Implications for subjective survey data. *American Economic Review, 91*(2), 67–72.

Biekpe, N. (2004). Financing small businesses in sub-Saharan Africa: Review of some key credit lending models and impact of venture capital provision. *Journal of African Business, 5*(1), 29–44.

Binks, M. R., & Ennew, C. T. (1996). Growing firms and the credit constraint. *Small Business Economics, 8*(1), 17–25.

Biggs, T., & Shah, M. (2002). The problem of African entrepreneurial development. In *Pathways out of poverty: Private firms and economic mobility in developing countries*. Kluwer Academic Publishers.

Bigsten, A., Collie, P., Dercon, S., Fafchamps, M., Gauthier, B., Gunning, J. W., Oduro, A., et al. (2003). Credit constraints in manufacturing enterprises in Africa. *Journal of African Economies, 12*(1), 104–125. https://doi.org/10.1093/jae/12.1.104

Blazy, R., & Weill, L. (2013). Why do banks ask for collateral in SME lending? *Applied Financial Economics, 23*(13), 1109–1122. https://doi.org/10.1080/09603107.2013.795272

Bopaiah, C. (1998). Availability of credit to family businesses. *Small Business Economics, 11*(1), 75–86.

Bouton, L., & Tiongson, E. R. (2010). Subjective perceptions of financing constraints: How well do they reflect credit market conditions? *Emerging Markets Review, 11*(2), 98–105.

Bullough, A., Guelich, U., Manolova, T. S., & Schjoedt, L. (2022). Women's entrepreneurship and culture: Gender role expectations and identities, societal culture, and the entrepreneurial environment. *Small Business Economics, 58*(2), 985–996. https://doi.org/10.1007/s11187-020-00429-6

Burns, P. (2016). *Entrepreneurship and small business: Start-up, growth and maturity* (4th ed.). MacMillan Palgrave.

Brei, M., Jacolin, L., & Noah, A. (2020). Credit risk and bank competition in Sub-Saharan Africa. *Emerging Markets Review, 44*, 100716. https://doi.org/10.1016/j.ememar.2020.100716

Brixiová, Z., Kangoye, T., & Yogo, T. U. (2020). Access to finance among small and medium-sized enterprises and job creation in Africa. *Structural Change and Economic Dynamics, 55*, 177–189. https://doi.org/10.1016/j.strueco.2020.08.008

Brush, C., Edelman, L. F., Manolova, T., & Welter, F. (2019). A gendered look at entrepreneurship ecosystems. *Small Business Economics, 53*(2), 393–408. https://doi.org/10.1007/s11187-018-9992-9

Bruton, G. D., Zahra, S. A., Van de Ven, A. H., & Hitt, M. A. (2022). Indigenous theory uses, abuses, and future. *Journal of Management Studies, 59*(4), 1057–1073. https://doi.org/10.1111/joms.12755

Calabrese, R., Girardone, C., & Sclip, A. (2021). Financial fragmentation and SMEs' access to finance. *Small Business Economics, 57*(4), 2041–2065. https://doi.org/10.1007/s11187-020-00393-1

Carbo-Valverde, S., Rodriguez-Fernandez, F., & Udell, G. F. (2016). Trade credit, the financial crisis, and firm access to finance. *Journal of Money, Credit and Banking, 48*(1), 113–143. https://doi.org/10.1111/jmcb.12292

Chakraborty, A., & Hu, X. C. (2006). Lending relationships in line-of-credit and non-line-of credit loans: Evidence from collateral use in small business. *Journal of Financial Intermediation, 15*(1), 86–107.

Chaney, T., Sraer, D., & Thesmar, D. (2012). The collateral channel: How real estate shocks affect corporate investment. *American Economic Review, 102*(6), 2381–2409.

Chaudhuri, K., Sasidharan, S., & Raj, R. S. N. (2020). Gender, small firm ownership, and credit access: Some insights from India. *Small Business Economics, 54*(4), 1165–1181. https://doi.org/10.1007/s11187-018-0124-3

Cowling, M., Liu, W., & Ledger, A. (2012). Small business financing in the UK before and during the current financial crisis. *International Small Business Journal, 30*(7), 778–800.

Cozarenco, A., & Szafarz, A. (2018). Gender biases in bank lending: Lessons from micro-credit in France. *Journal of Business Ethics, 147*(3), 631–650. https://doi.org/10.1007/s10551-015-2948-y

Dabić, M., Dana, L. P., Nziku, D. M., Ramadani, V., & (Eds.). (2022). *Women entrepreneurs in Sub-Saharan Africa: Historical framework, ecosystem, and future perspectives for the region*. Springer Nature. https://link.springer.com/book/9783030989651

Dekel-Dachs, O., Najda-Janoszka, M., Stokes, P., Simba, A., & Tarba, S. (2021). Searching for a new perspective on institutional voids, networks and the internationalisation of SMEs in emerging economies: A systematic literature review. *International Marketing Review, 38*(5), 879–899. https://doi.org/10.1108/IMR-12-2020-0303

Diamond, D. W. (1984). Financial intermediation and delegated monitoring. *The Review of Economic Studies, 51*(3), 393–414.

Dinh, H. T., Mavridis, D. A., & Nguyen, H. B. (2012). The binding constraint on the growth of firms in developing countries. In H. T. Dinh & G. R. G. Clarke (Eds.), *Performance of Manufacturing Firms in Africa: An Empirical Analysis* (pp. 87–137). World Bank. https://doi.org/10.1596/978-0-8213-9632-2

Duarte, F. D., Gama, A. P. M., & Esperança, J. P. (2017). Collateral-based in SME lending: The role of business collateral and personal collateral in less-developed countries. *Research in International Business and Finance, 39*(2017), 406–422.

Demirgüç-Kunt, A., & Klapper, L. (2012a). Measuring financial inclusion: The Global Findex Database. In *Policy Research Working Paper 6025*. World Bank.

Demirgüç-Kunt, A., & Klapper, L. (2012b). Financial inclusion in Africa: An overview. In *World Bank Policy Research Working Paper, 6088*. World Bank.

Egger, P. H., & Keuschnigg, C. (2017). Access to credit and comparative advantage. *Canadian Journal of Economics/Revue canadienne d'économique, 50*(2), 481–505.

Erdogan, A. I. (2019). Determinants of perceived bank financing accessibility for SMEs: Evidence from an emerging market. *Economic Research-Ekonomska Istraživanja, 32*(1), 690–716. https://doi.org/10.1080/1331677X.2019.1578678

Ferreira, M. E., & Soares de Oliveira, R. (2019). The political economy of banking in Angola. *African Affairs, 118*(470), 49–74.

Filatotchev, I., Ireland, R. D., & Stahl, G. K. (2022). Contextualizing management research: An open systems perspective. *Journal of Management Studies, 59*(4), 1036–1056. https://doi.org/10.1111/joms.12754

Foltz, J. D. (2004). Credit market access and profitability in Tunisian agriculture. *Agricultural Economics, 30*(3), 229–240.

Fowowe, B. (2017). Access to finance and firm performance: Evidence from African countries. *Review of Development Finance, 7*(1), 6–17.

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.

Gama, A. P., & Duarte, F. (2015). Collateral and relationship lending in loan pricing: Evidence from UK SMEs. *WSEAS Transactions on Business and Economics, 12*, 21–35.

Gitman, L. J. (2003). *The principles of managerial finance* (7th ed.). Pearson Education Inc.

Halkias, D., Nwajiuba, C., Harkiolakis, N., & Caracatsanis, S. M. (2011). Challenges facing women entrepreneurs in Nigeria. *Management Research Review, 34*(2), 221–235. https://doi.org/10.1108/01409171111102821

Hamann, R., Luiz, J., Ramaboa, K., Khan, F., Dhlamini, X., & Nilsson, W. (2020). Neither colony nor enclave: Calling for dialogical contextualism in management and organization studies. *Organization Theory, 1*(1), 2631787719879705. https://doi.org/10.1177/2631787719879705

Hanedar, E. Y., Broccardo, E., & Bazzana, F. (2014). Collateral requirements of SMEs: The evidence from less-developed countries. *Journal of Banking and Finance, 38*(2014), 106–121.

Hanley, A. (2002). Do binary collateral outcome variables proxy collateral levels? The case of collateral from start-ups and existing SMEs. *Small Business Economics, 18*(4), 317–331.

Hansen, H., & Rand, J. (2014a). Estimates of gender differences in firm's access to credit in Sub-Saharan Africa. *Economics Letters, 123*(3), 374–377.

Hansen, H., & Rand, J. (2014b). The myth of female credit discrimination in African manufacturing. *Journal of Development Studies, 50*(1), 81–96.

Harrison, A. E., Lin, J. Y., & Xu, L. C. (2014). Explaining Africa's (dis)advantage. *World Development, 63*, 59–77.

Hill, C. W., & Jones, T. M. (1992). Stakeholder-agency theory. *Journal of Management Studies, 29*(2), 131–154.

Hoffman, B. (2010). "I think I can, but I'm afraid to try": The role of self-efficacy beliefs and mathematics anxiety in mathematics problem-solving efficiency. *Learning and Individual Differences, 20*(3), 276–283.

Howorth, C., & Moro, A. (2012). Trustworthiness and interest rates: An empirical study of Italian SMEs. *Small Business Economics, 39*(1), 161–177.

IFC, (2010). *Scaling up SME access to financial services in the developing world*. International Finance Corporation, Washington D.C.

Ibrahim, M., & Alagidede, P. (2018). Effect of financial development on economic growth in sub-Saharan Africa. *Journal of Policy Modeling, 40*(6), 1104–1125.

Inoue, T., & Hamori, S. (2016). Financial access and economic growth: Evidence from Sub-Saharan Africa. *Emerging Markets Finance and Trade, 52*(3), 743–753. https://doi.org/10.1080/1540496X.2016.1116282

Issahaku, H. (2019). Harnessing international remittances for financial development: the role of monetary policy. *Ghana Journal of Development Studies, 16*(2), 113–137.

Jensen, M. C., & Mecklinc, W. H. (1976). Theory of the firm: managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics, 3*, 305–360.

Jimenez, G., Salas, V., & Saurina, J. (2006). Determinants of collateral. *Journal of Financial Economics, 81*(2), 255–281.

Kanze, D., Huang, L., Conley, M. A., & Higgins, E. T. (2018). We ask men to win and women not to lose: Closing the gender gap in start-up funding. *Academy of Management Journal, 61*(2), 586–614. https://doi.org/10.5465/amj.2016.1215

Karimu, A., Salia, S., Hussain, J. G., & Tingbani, I. (2021). Are competitive microfinance services worth regulating? Evidence from microfinance institutions in Sub-Saharan Africa. *International Journal of Finance & Economics, 26*(1), 476–492.

Kautonen, T., Fredriksson, A., Minniti, M., & Moro, A. (2020). Trust-based banking and SMEs' access to credit. *Journal of Business Venturing Insights, 14*, e00191. https://doi.org/10.1016/j.jbvi.2020.e00191

Kim, G. O. (2006). Do equally owned small businesses have equal access to credit? *Small Business Economics, 27*(4-5), 369–386.

Koubâa, H. F. (2014). Start-up informal finance and formal microfinance: The role of human capital. *Strategic Change, 23*(7-8), 415–423. https://doi.org/10.1002/jsc.1986

Kuntchev, V., Ramalho, R., Rodríguez-Meza, J., & Yang, J. S. (2013). *What have we learned from the enterprise surveys regarding access to credit by SMEs? Policy Research Working Paper 6670*. Financial and Private Sector Development Enterprise Analysis Unit.

Le, L. H., & Stefańczyk, J. K. (2018). Gender discrimination in access to credit: are women-led SMEs rejected more than men-led? *Gender, Technology and Development, 22*(2), 145–163.

Leitch, C., Welter, F., & Henry, C. (2018). Women entrepreneurs' financing revisited: Taking stock and looking forward: New perspectives on women entrepreneurs and finance. *Venture Capital, 20*(2), 103–114. https://doi.org/10.1080/13691066.2018.1418624

Levine, R., Loayza, N., & Beck, T. (2000). Financial intermediation and growth: Causality and causes. *Journal of Monetary Economics, 46*(1), 31–77.

Liberti, J. M., & Mian, A. R. (2010). Collateral spread and financial development. *The Journal of Finance, 65*(1), 147–177.

Lins, K. V., Servaes, H., & Tufano, P. (2010). What drives corporate liquidity? An international survey of cash holdings and lines of credit. *Journal of Financial Economics, 98*(1), 160–176.

Love, I., Martínez Pería, M. S., & Singh, S. (2016). Collateral registries for movable assets: does their introduction spur firms' access to bank financing? *Journal of Financial Services Research, 49*, 1–37.

Mach, T. L., & Wolken, J. D. (2012). Examining the impact of credit access on small firm survivability. In *Small Businesses in the Aftermath of the Crisis* (pp. 189–210). Physica.

Mann, R. J. (1997). Explaining the pattern of secured debt. *Harvard Law Review, 110*(3), 625–683.

Mariotti, S., & Glackin, C. (2016). *Entrepreneurship: Starting and operating a small business* (4th ed.). Essex.

Mathur, I. & Marcelin, I. (2014). Unlocking credit. *Risk management post financial crisis: A period of monetary easing (contemporary studies in economic and financial analysis, 96)*, pp.221-252. Available at: https://doi.org/10.1108/S1569-375920140000096009. Accessed on 18.02.2020.

Matthews, K., & Thompson, J. (2008). *The economics of banking*. Wiley.

Meenakshi, R., Vani, B., & P. & Bhattacharjee, M. B. (2011). *Credibility of Equal Access to Credit: Does Gender Matter?* Athena Information Solutions Pvt.

Mela, C. F., & Kopalle, P. K. (2002). The impact of collinearity on regression analysis: the asymmetric effect of negative and positive correlations. *Applied Economics, 34*(6), 667–677.

Meniago, C., & Asongu, S. A. (2018). Revisiting the finance-inequality nexus in a panel of African countries. *Research in International Business and Finance, 46*, 399–419. https://doi.org/10.1016/j.ribaf.2018.04.012

Menkhoff, L., Neuberger, D., & Rungruxsirivorn, O. (2012). Collateral and its substitutes in emerging markets' lending. *Journal of Banking and Finance, 36*(3), 817–834.

Mishkin, F. S., & Eakins, S. G. (2005). *Financial markets and institutions, Pearson Addison Wesley* (5th ed.).

Mitton, T. (2016). The wealth of subnations: Geography, institutions, and within-country development. *Journal of Development Economics, 118*, 88–111.

Moro, A., & Fink, M. (2013). Loan managers' trust and credit access for SMEs. *Journal of Banking and Finance, 37*(3), 927–936.

Mol-Gómez-Vázquez, A., Hernández-Cánovas, G., & Koëter-Kant, J. (2019). Bank market power and the intensity of borrower discouragement: Analysis of SMEs across developed and developing European countries. *Small Business Economics, 53*(1), 211–225. https://doi.org/10.1007/s11187-018-0056-y

Msomi, T., & Olarewaju, O. (2021). Evaluation of access to finance, market and viability of small and medium-sized enterprises in South Africa. *Problems and Perspectives in Management, 19*(1), 281–289. https://doi.org/10.21511/ppm.19(1)0.2021.24

Muravyev, A., Talavera, O., & Schäfer, D. (2009). Entrepreneurs' gender and financial constraints: Evidence from international data. *Journal of Comparative Economics, 37*(2), 270–286. https://doi.org/10.1016/j.jce.2008.12.001

Naegels, V., Mori, N., & D'Espallier, B. (2018). An institutional view on access to finance by Tanzanian women-owned enterprises. *Venture Capital, 20*(2), 191–210.

N'Guessan, M. N., & Hartarska, V. (2021). Funding for BOP in emerging markets: Organizational forms and capital structures of microfinance institutions. *Research in International Business and Finance, 58*, 101511. https://doi.org/10.1016/j.ribaf.2021.101511

OECD. (2021). *Entrepreneurship policies through a gender lens, OECD studies on SMEs and entrepreneurship*. OECD Publishing. https://doi.org/10.1787/71c8f9c9-en

OECD, (2019), *European Training Foundation, European Union, European Bank for Reconstruction and Development in SME Policy Index: Western Balkans and Turkey 2019*, Assessing the Implementation of the Small Business Act for Europe. Available online: at https://www.oecd-ilibrary.org/docserver/16fc8d6d-en.pdf. Accessed on 18.02.2020

OECD. (2006). *The SME financing gap, Vol. I: Theory and evidence. Organisation for Economic Co-operation and Development*.

Ojong, N., Simba, A., & Dana, L.-P. (2021). Female entrepreneurship in Africa: A review, trends, and future research directions. *Journal of Business Research, 132*(2), 233–248. https://doi.org/10.1016/j.jbusres.2021.04.032

Ono, A., & Iichiro, U. (2009). Role of Collateral and Personal Guarantees in Relationship Lending: Evidence from Japan's SME Loan Market. *Journal of Money, Credit, and Banking, 41*, 935–960.

Ortiz-Molina, H., & Penas, M. F. (2008). Lending to small businesses: The role of loan maturity in addressing information problems. *Small Business Economics, 30*(4), 361–383.

Ogundana, O. M., Simba, A., Dana, L. P., & Liguori, E. (2021). Women entrepreneurship in developing economies: A gender-based growth model. *Journal of Small Business Management, 59*(sup1), S42–S72. https://doi.org/10.1080/00472778.2021.1938098

Palazuelos, E., Crespo, Á. H., & del Corte, J. M. (2018). Accounting information quality and trust as determinants of credit granting to SMEs: The role of external audit. *Small Business Economics, 51*(4), 861–877.

Penrose, E. (1965). *The Theory of the Growth of the Firm*. Oxford University Press.

Rahman, A., Belas, J., Kliestik, T., & Tyll, L. (2017). Collateral requirements for SME loans: empirical evidence from the Visegrad countries. *Journal of Business Economics and Management, 18*(4), 650–675.

Raspe, O., & Van Oort, F. (2006). The knowledge economy and urban economic growth. *European Planning Studies, 14*(9), 1209–1234.

Richardson, P., Howarth, R., & Finnegan, G. (2004). *The challenges of growing small businesses: Insights from women entrepreneurs in Africa. . SEED Working Paper 47*. International Labour Office.

Ross, S. (1973). The economic theory of agency: the principal's problem. *American Economic Review, 63*(2), 134–139.

Sacerdoti, M.E. (2005). *Access to bank credit in sub-Saharan Africa: Key issues and reform strategies (No.5-166 IMF Working Paper)*, Monetary and Financial Systems Department International Monetary Fund. New York: USA.

Samuel, S., Musah, A. B., & Nkegbe, P. K. (2017). Farm credit access, credit constraint and productivity in Ghana. *Agricultural Finance Review, 77*(4), 446–462.

Santos, M. A. D., Fávero, L. P., Fouto, N. M. M. D., Belfiore, P., & Souza, R. D. F. (2021). Determinants of credit access of small and medium enterprises in emerging economies: Evidence from the World Bank enterprise surveys. *International Journal of Globalisation and Small Business, 12*(3), 266–298.

Sarfo, Y., Musshoff, O., & Weber, R. (2019). Loan officer rotation and credit access: Evidence from Madagascar. *Agricultural Finance Review, 80*(1), 51–67.

Scarborough, N., & M. & Cornwall, J. R. (2016). *Essentials of entrepreneurship and small business management* (8e ed.). Pearson Education Ltd.

Seema, N., Seyyed, F. J., & Shehzad, C. T. (2021). Impact of gender on access to finance in developing countries. *Applied Economics, 53*(57), 6582–6610. https://doi.org/10.1080/00036846.2021.1947958

Sharpe, S. A. (1990). Asymmetric information, bank lending, and implicit contracts: A stylized model of customer relationships. *The Journal of Finance, 45*(4), 1069–1087.

Simba, A., & Nziku, D. M. (2022). Women's entrepreneurship in Zimbabwe. In M. Dabić, L.-P. Dana, D. M. Nziku, & V. Ramadani (Eds.), *Women Entrepreneurs in Sub-Saharan Africa: Historical Framework, Ecosystem, and Future Perspectives for the Region (Contributions to Management Science)*. Springer Nature Switzerland AG https://link.springer.com/book/9783030989651

Simtowe, F., Diagne, A., & Zeller, M. (2008). Who is credit constrained? Evidence from rural Malawi. *Agricultural Finance Review, 68*(2), 255–272.

Stefani, M. L., & Vacca, V. (2015). Small firms' credit access in the euro area: does gender matter? *CESifo Economic Studies, 61*(1), 165–201.

Stein, P., Goland, T., & Schiff, R. (2010). *Two trillion and counting: Assessing the credit gap for micro, small, and medium-size enterprises in the developing world*. International Finance Corporation/McKinsey and Group.

Steijvers, T., & Voordeckers, W. (2009). Collateral and credit rationing: A review of recent empirical studies as a guide for future research. *Journal of Economic Surveys, 23*(5), 924–946.

Stringfellow, R., Coulter, J., Hussain, A., Lucey, T., & McKone, C. (1997). Improving the access of smallholders to agricultural services in sub-Saharan Africa. *Small Enterprise Development, 8*(3), 35–41.

Stulz, R. M., & Johnson, H. (1985). An analysis of secured debt. *Journal of Financial Economics, 14*(4), 501–521.

Tajeddin, M., & Carney, M. (2019). African business groups: How does group affiliation improve SMEs' export intensity? *Entrepreneurship Theory and Practice, 43*(6), 1194–1222. https://doi.org/10.1177/1042258718779586

Thelen, K. (2019). Transitions to the knowledge economy in Germany, Sweden, and the Netherlands. *Comparative politics, 51*(2), 295–315. https://doi.org/10.5129/001041519X15647434969821

Triki, T. & Faye, I. (2013). *Financial inclusion in Africa*. : African Development Bank. Available at: https://pdfs.semanticscholar.org/. Accessed on 20.02.2020.

UN (2021). Financing for sustainable development report 2021. UN's Inter-agency Task Force on Financing for Development. : United Nations. Available at: https://developmentnance.un.org/fsdr2021. Accessed on 28.06.2022

Van Caneghem, T., & Van Campenhout, G. (2012). Quantity and quality of information and SME financial structure. *Small Business Economics, 39*(2), 341–358.

Voordeckers, W., & Steijvers, T. (2006). Business collateral and personal commitments in SME lending. *Journal of Banking and Finance, 30*(11), 3067–3086.

Wasiuzzaman, S., & Nurdin, N. (2019). Debt financing decisions of SMEs in emerging markets: Empirical evidence from Malaysia. *International Journal of Bank Marketing, 37*(1), 258–277. https://doi.org/10.1108/IJBM-12-2017-0263

Wellalage, N., Duppati, G., & Fouzi, F. (2013). *Institutional factors create additional glass ceilings: Evidence from female owned South Asian SMEs' access to external financing. Working Paper 14 — 008*. Asian Institute of Management. New York: USA.

Wellalage, N. H., & Locke, S. (2016). Informality and credit constraints: Evidence from Sub-Saharan African MSEs. *Applied Economics, 48*(29), 2756–2770.

Wellalage, N., & Locke, S. (2017). Access to credit by SMEs in South Asia: Do women entrepreneurs face discrimination. *Research in International Business and Finance, 41*, *336–346*.

Wellalage, N. H., & Thrikawala, S. (2021). Bank credit, microfinance and female ownership: Are women more disadvantaged than men? *Finance Research Letters, 42*, 101929. https://doi.org/10.1016/j.frl.2021.101929

Weber, R., & Musshoff, O. (2012). Is agricultural microcredit really more risky? *Evidence from Tanzania. Agricultural Finance Review, 72*(3), 416–435.

Wehinger, G. (2014). SMEs and the credit crunch. *OECD Journal: Financial Market Trends, 2013*(2), 115–148.

Welter, F. (2011). Contextualizing entrepreneurship—conceptual challenges and ways forward. *Entrepreneurship theory and Practice, 35*(1), 165–184.

William, K. (2017). *Does information sharing matter? Cross-Country Evidence on Foreign Banks, (PhD Dissertation)*. University of Delaware. New York: USA.

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT press. New York: USA.

World Bank, (2011). *Enterprise surveys indicators descriptions*. World Bank, Washington D.C.

World Bank Group. (2015). *2013 Namibia Enterprise Survey: Country highlights. Enterprise surveys country highlights. The World Bank Group*. World Bank https://openknowledge.worldbank.org/handle/10986/22830

World Bank, (2016). *Enterprise surveys indicators descriptions*. World Bank, Washington D.C.

World Bank Group (2022). Small and medium enterprises (SMEs) finance: Improving SMEs' access to finance and finding innovative solutions to unlock sources of capital. The World Bank Group. : World Bank. Available at: https://www.worldbank.org/en/topic/smefinance. Accessed on 30.06.2022.

Xiang, D., Worthington, A. C., & Higgs, H. (2015). Discouraged finance seekers: An analysis of Australian small and medium-sized enterprises. *International Small Business Journal, 33*(7), 689–707.

Yartey, A. C. (2011). Small business finance in Sub-Saharan Africa: The case of Ghana. *Management Research Review, 34*(2), 172–185. https://doi.org/10.1108/01409171111102795

Yülek, M. A., & Yeda, V. (2018). Broadening Financial Intermediation in Sub-Saharan Africa. *Financing Sustainable Development in Africa*. In U. Efobi & S. Asongu (Eds.), *Financing Sustainable Development in Africa* (pp. 93–119). Palgrave Macmillan. https://doi.org/10.1007/978-3-319-78843-2_5

Zahra, S. A. (2007). Contextualizing theory building in entrepreneurship research. *Journal of Business venturing, 22*(3), 443–452.

Zhang, D. (2021). How environmental performance affects firms' access to credit: Evidence from EU countries. *Journal of Cleaner Production, 315*, 12829. https://doi.org/10.1016/j.jclepro.2021