Financial inclusion and performance of MSMEs in Eswatini

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Abstract

Purpose – Micro, small and medium-sized enterprises (MSMEs) are the backbone of economic development for every economy. They contribute to local economic development through household wealth creation, employment generation and poverty reduction. Despite this pivotal role, MSMEs lack access to finance, and scholarship on the enabling role of financial inclusion on micro, small and medium-sized enterprises' performance is scant. The authors contribute to closing the knowledge gap by examining the enabling effect of financial inclusion on MSMEs using the FinScope MSME 2017 survey for the Kingdom of Eswatini. This paper aims to discuss the aforementioned objective.

Design/methodology/approach – The study used the re-centered influence function regression framework to estimate unconditional quantile regressions and the generalized ordered logit model to analyze the data.

Findings – The findings from the unconditional quantile regression revealed that small changes in access to bank accounts, saving for business, formal saving, stokvel and informal saving at the 50th and 75th percentiles have a positive and statistically significant effect on microenterprises' annual turnover profit. Conversely, small changes in formal insurance have a mixed effect on annual turnover profit. At the 10th and 25th percentiles, a small increment in insurance reduces annual turnover profit but increases microenterprise annual turnover profit at the 75th percentile. Meanwhile, the evidence from the generalized ordered logit model showed that financial inclusion reduces the likelihood of microenterprises being classified as least developed and increased the chances of microenterprises falling into emerging and developed business categories.

Research limitations/implications – This study makes use of a cross-sectional survey dataset, as a result, it does not infer causal relationships over the long term, but rather an association between the independent and dependent variables.

Practical implications – Overall, formal and informal financial inclusion enhances the annual turnover profit for microenterprises, particularly at the 50th and 75th percentiles in the Kingdom of Eswatini. The authors recommend a specialized institution such as a micro, small and medium-sized partial credit guarantee scheme to improve the quality and affordability of credit for microenterprises, and a mix of financial and non-financial supports depending on the development stage to boost a sustainable microenterprises' sector.

Originality/value – The study uses two advanced cross-sectional techniques, the recentered influence function framework and the generalized ordered logit model to analyze the data. The paper is original and contributes to the discussion of the role of financial inclusion in enabling microenterprises' success in Africa, using the FinScope 2017 survey of microenterprises in Eswatini as a case study.

Disclaimer: The views expressed in this paper are those of the authors and not the views of the University of the Western Cape and Stellenbosch Business School.

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1. Introduction

Micro, small and medium-sized enterprises (MSMEs [1]) are the backbone of economic development and innovation in both developed and developing economies and are a major catalyst for job creation and economic growth. Worldwide, nine out of ten new jobs are created by small businesses, notwithstanding the lack of financial access which is often cited as a major obstacle to MSMEs' growth (Moritán, 2020). The International Finance Corporation (IFC) (2017, p. 23) estimates that of the 162 MSMEs in developing economies, 21% (29.6 million) and 19% (26.6 million) are fully and partially constrained [2] by access to finance. This concurs with updated data on the SME Finance Forum website [3] that 131 million or 41% of formal MSMEs in developing countries have unmet financing needs, which translates into a financing gap of US$5tn. The emergence of financial inclusion in the 2000s attracted much attention among development practitioners as an enabler of inclusive growth to support the attainment of UN sustainable development goals (SDGs). That is, financial inclusion helps unlock the social and economic potential of unbanked households and firms. Financial markets, therefore, play a pivotal role in facilitating these SDGs by supporting the creation of a sustainable future through access to finance for individuals, small enterprises and governments. Overall, financial markets help to promote secure payments of basic services, trade, smooth consumption, create wealth, improve capital allocation and foster enterprise development (FinMark Trust and UNCDF, 2020).

The Kingdom of Eswatini, a small landlocked country in Southern Africa with a population of 1.2 million, has approximately 59,283 MSMEs which represents 10% of the population. The MSME sector employs about 16% of the total working-age population (FinMark Trust, 2017) and plays a strategic role in addressing the country's triple challenges of high youth unemployment, rising poverty rates and income inequality (FinMark Trust and UNCDF, 2020). The Kingdom of Eswatini has implemented a range of programs to support the development of a sustainable and profitable MSME sector. These include capacity building, institutional development, business support services and the institutionalization of an MSME financial inclusion policy framework in 2004, revised in 2009 to foster the growth of the MSME sector (Eswatini, 2018). These dynamics make Eswatini an interesting case study to understand how financial inclusion policies can create enabling business environments for viable MSME sector development. Additionally, scholarship on the enabling role of financial inclusion on MSME performance is scant. Besides, the performance of the MSME sector has been unsatisfactory in terms of poverty alleviation, job creation and curbing income inequality despite policy action to support its development.

At the core of this underperformance is the challenge of access to external finance. For instance, an overwhelming 84% of MSMEs in Eswatini do not borrow from banks, while a few borrow from friends and family (FinMark Trust and UNCDF, 2020). Barriers to external credit limit MSMEs from taking advantage of the benefits of economic growth, and evidence confirmed that MSMEs with external finance grow faster and create more jobs (Adelino *et al.*, 2017). Financial inclusion therefore enables previously excluded small businesses to access external credit, generate productivity and increase sales growth (Lee *et al.*, 2020). Thus, the labour-intensive nature of MSMEs, their use of mostly local resources, and their role as a nurturing hub for entrepreneurship, necessitate the need to assess the enabling role of financial inclusion on MSME performance in a developing country context of Eswatini.

We adopt an unconditional quantile regression approach, implemented using the recentered influence function framework developed by Firpo *et al.* (2009) and its recent extension (Rios-Avila, 2020). Our study is among the first to use unconditional quantile regression using microenterprise level data to investigate the effect of financial inclusion on MSME performance, thereby making a methodological contribution. Quantile regression techniques have several advantages over mean regressions, such as robustness to outlier observations, and provide a complete characterization of the distribution of the outcome variable of interest. Additionally, the quantiles in unconditional quantile regression are defined pre-regression. That is, covariates help net out spurious associations between the outcome and the independent variables, but the inclusion of covariates has no effect on which observation is defined to be at the median or other quantiles of the outcome variable (Killewald and Bearak, 2014, p. 353).

The empirical review has highlighted the lack of empirical studies that have focused on the African context, with this study contributing to filling the gap. The proposed lessons from Eswatini can be extended to other developing countries facing similar challenges of high youth unemployment, rising poverty rates and income inequality.

The remainder of the paper is organized as follows. Section 2 presents some descriptive analysis, section 3 discusses the theoretical and empirical literature. The data sources and empirical strategy are presented in sections 4 and 5, section 6 discusses the results and section 7 concludes the study.

2. Descriptive statistics and stylized facts about the MSMEs sector in Eswatini

An overview of the FinScope MSME survey Eswatini 2017 revealed there are about 59,251 MSMEs of which 74.6% are independent entrepreneurs, 17.7% are micro-businesses, 6.6% are small businesses and one percent are medium-sized businesses. Female businesses are mostly concentrated in the independent entrepreneur category (85%) and their share of ownership reduces as the business size expressed in terms of employment increases, reaching 0.6% for medium-sized businesses. This implies females are largely involved in subsistence businesses, and one theoretical explanation is the motherhood phenomenon. That is, at the childbearing age most women prefer to operate subsistence businesses, sometimes from the comfort of their homes because of the flexibility to care for their children. Female over-representation in subsistence businesses could also be a result of the low level of education and the difficulty of finding formal employment.

MSME businesses in Eswatini are spread across all sectors of the economy and operate from a variety of designations. Figure 1 below compares female and male businesses across sectors and places of business operation.

Figure 1 revealed that dwellings are the dominant place of business operation, 44.5% and 37.1% for female and male businesses respectively. Other important places of business operation are pavement, door to door, open space and container in a fixed place. Females are more active in selling stuff in the same form (retail), value-added and craft business activities: 25.5%, 20.3%, 14.3% vs. 16%, 8.9% and 5.9% for males. Conversely, males are more engaged in vegetable farming (15.1%), skilled services (11.6%) and car wash/gardening (11.5%) relative to 8.8%, 5.6% and 2.8%, respectively, for females. Overall, females are fairly represented across all the business sectors. Also, it is worth visualizing the proportion of jobs created by MSMEs engaged in each of these sectors as depicted in Figure 2 below.

As depicted by Figure 2, car wash and gardening MSMEs created most of jobs on average 67.2%, followed closely by retailing at 54% (selling something in the same form) and skilled services 43.5% and the construction sector at 25.4%. Skilled services and car wash/gardening, construction, tourism, and to some extent crafts, have high potential of job
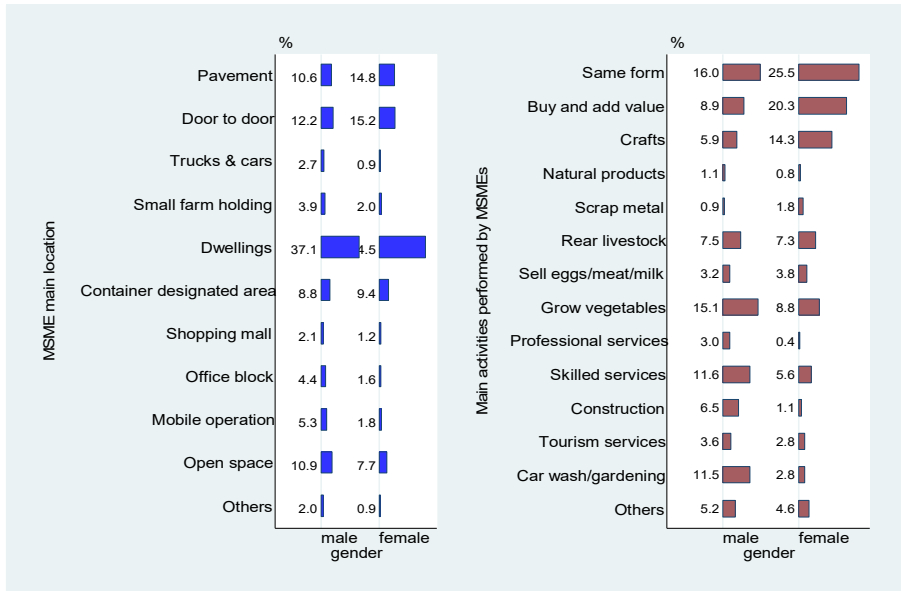
Figure 1.
Main place of business operation and sectors by gender

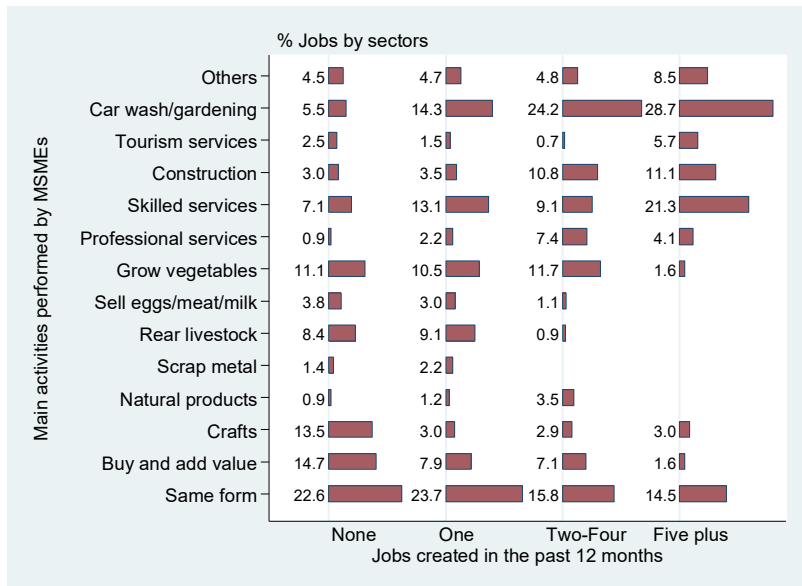**Source(s):** By authors

Figure 2.
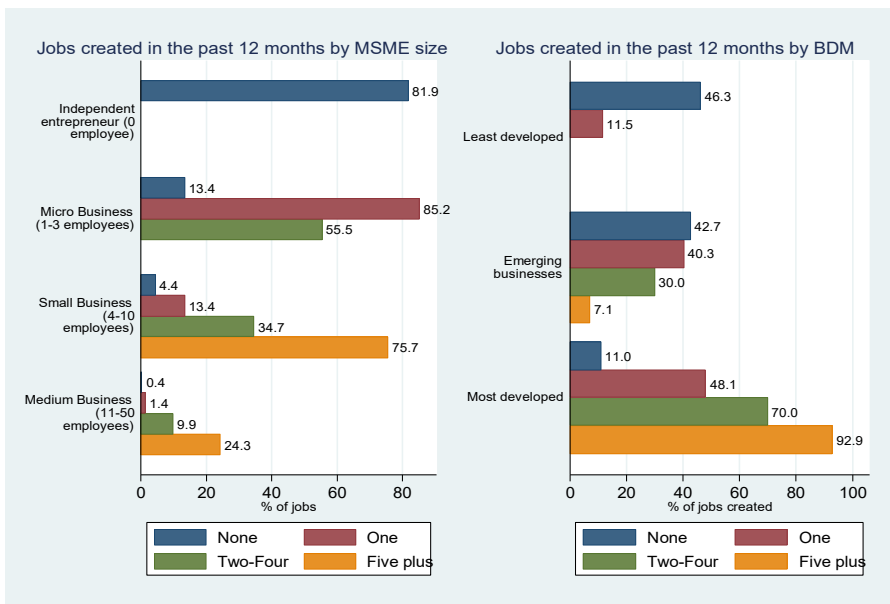The number of jobs created by sector in the past 12 months

Source(s): By authors

creation (four plus employees), and as such are policy incentives to growth and the MSMEs sector should prioritize these sectors.

Figure 3 provides further insights of the cross-tabulation analysis between MSME businesses development measure, size and job creation. The left-hand panel of Figure 3 shows that business development measures share a strong positive relationship with job creation. The percentage of the number of employees increased with business development measure (most developed), decreased for MSMEs categorized as least developed, and gradually increased for MSMEs categorized as emerging businesses. Similarly, the right-hand panel indicates that small businesses are the engine of job creation in Eswatini, followed by medium businesses and lastly micro businesses. Thus, the right-hand panel of Figure 3 suggests an integrated policy approach to the development of the MSMEs sector in Eswatini, such as a life cycle business development approach.

Thus, to absorb the high unemployment rate among youth and women, the government of Eswatini should invest more in incubation programs and design incentive schemes that will encourage entrepreneurs to transition from independent entrepreneurs and small informal businesses to the small formal and medium-sized business categories which have a high potential for growth and job creation.

Lastly Figure 4 depicts financial inclusion of MSMEs and access to formal insurance and saving strands revealed a skewed distribution. The majority of independent entrepreneurs (83.4%) had no formal insurance, and the number reduces as the size of the MSMEs increases (left-hand panel). Independent entrepreneurs mostly used informal saving channels (90.4%), 86.6% do not save, and the use of informal saving declined drastically with business size with medium size MSMEs not using informal saving mechanisms. Overall, financial inclusion uptake among MSMEs in Eswatini is low and the skewed distribution suggests the need for a modelling technique that is robust to outlier observations.

Figure 3.
Jobs created in the past 12 months by business development measure (BDM) and size
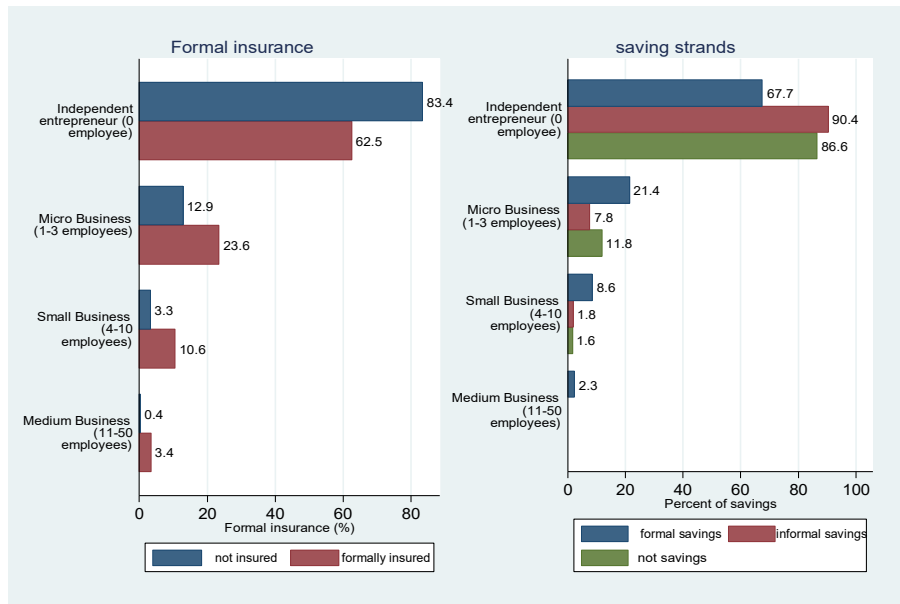
Source(s): By authors

Figure 4.
Financial inclusion of
MSMEs, formal
insurance and saving
strands

Source(s): By authors

3. Literature review

3.1 The theoretical framework

Theory suggests that a critical channel through which finance promotes growth is through credit extension to firms. Firms with greater access to finance have a greater probability of succeeding and growing faster (Adelino *et al.*, 2017). Financial markets channel resources from surplus economic units to deficit units, targeting productive projects. Financial markets help to overcome the problem of information asymmetries and transaction costs that prevent the direct pooling of society's savings. Financial markets can determine who starts a business and who cannot, who pays for further education and who cannot (Demirgüç-Kunt and Levine, 2008). Frictions in the financial market such as transaction costs and information asymmetries are more binding on the poor and microenterprises because of lack of collateral, and credit history which necessitates financial intermediaries to reduce the amount of credit allocated to MSMEs. This involuntary financial exclusion not only hampers the formation of new MSMEs but also inhibits the growth of existing MSMEs. Olawale and Garwe (2010) argue that low access to financial services in Sub-Saharan Africa partially explains the reason for the high concentration of jobs in the micro and informal sectors with low productivity. Without an inclusive financial system, the poor and microenterprises that are constrained by the lack of collateral, credit histories, and connections will have to rely on their meagre savings and earnings (Beck *et al.*, 2009).

Access to an account at a formal financial institution serves as the entering point into the formal financial system for households and firms upon which other financial products, such as credit, saving, payment, insurance and remittances, can be accessed. Lack of access means the poor and microenterprises will have to deal in cash or use informal mechanisms to fund their daily activities, manage risk, save for retirement and expand their businesses (Demirgüç-Kunt and Klapper, 2012). The World Bank (2008) viewed lack of access to finance as the main mechanism for perpetuating persistent income inequality, high poverty, and slow

economic growth. It is therefore expected that access and use of financial services by microenterprises will enable them to save for their business, manage risk, build credit history and open the doors for credit facilities which will ultimately foster enterprise growth. An inclusive financial system with better financial access for all equalizes opportunities and unlocks the economic potential for the entire economy, thereby fostering inclusive growth. Building inclusive financial systems that offer wider access and combinations of financial services such as formal accounts, savings, credit, insurance and payment facilities are relevant goals for both developed and developing economies (World Bank, 2008).

Having noted how a lack of access to finance can hamper the performance of microenterprises, their specific role in the financial inclusion–economic growth transmission channel can further be theorized. Microenterprises that have access to financial resources can improve the quality of their human capital which is paramount to spur innovation and entrepreneurship in the economy (Abor *et al.*, 2020). In turn, more entrepreneurial activity boosts performance, leading to more job creation and ultimately economic growth. The access and use of financial services by microenterprises will enable them to save for their business, manage risk, build credit history and open doors for credit facilities. This increase in economic resilience can cascade into a more resilient and stable macroeconomic environment conducive to economic growth (Abor *et al.*, 2020).

3.2 Empirical literature review
MSMEs are the catalyst for job and household wealth creation in the economy. Hence, insights on how financial inclusion affects MSMEs' performance is important from a policy perspective, particularly for developing economies where MSMEs constitute a significant share of the business enterprises in operation. However, the empirical literature on the financial inclusion of MSMEs performance has not received much attention despite their potential contribution to local economic development and poverty alleviation. Notwithstanding, the social and economic impact of SMEs has attracted scholarly attention and the literature is growing (Chan and Lin, 2013). Aside from the limited empirical literature on MSMEs access to finance and performance, the few available studies have documented that better access and use of finance improves productivity and growth of MSMEs. For example, Butler and Cornaggia (2011) followed a systematic analytical process in the USA to isolate the effect of the unobservable and found that better access to finance increases corn yields in counties with high levels of bank deposits over the sample period of study relative to counties with low levels of bank deposits. Corn producers increased their productivity in counties with better access to finance in response to exogenous shifts in the demand for corn. Khandker *et al.* (2013) examined whether access to finance matters for microenterprise growth in Bangladesh. Their empirical analysis revealed that it is the lack of access to affordable finance rather than the non-credit constraints such as lack of demand or access to transportation and electricity that matters most in limiting microenterprise growth in Bangladesh.

Fanta *et al.* (2017) documented that the lack of access to finance in Lesotho, Malawi, Mozambique, Zambia and Zimbabwe is the primary barrier for microenterprise startups and growth. They found that for large proportions of small businesses in these five countries, the lack of access to finance is a serious obstacle to start-up and growth. Beck *et al.* (2015) used survey data on Chinese rural households and found that better access to finance is correlated with the decision to start microenterprises. Their evidence further indicates that the use of informal finance is associated with higher growth of rural microenterprises with employees but has no effect on those microenterprises without employees. These results are consistent with Degryse *et al.* (2013) who suggested the simultaneous use of informal and formal finance as the optimal choice for small firms in China and also pointed out that the role of informal

finance becomes handy for small firms in countries with underdeveloped and inefficient financial markets. However, Beck *et al.* (2015) failed to find any relationship between access to formal finance and firm growth. Conversely, Ayyagari *et al.* (2010), Klapper *et al.* (2006), Ayyagari *et al.* (2011) and Beck *et al.* (2005) found that improved access to formal finance correlates with faster firm growth, promotes new entrance and enhances rapid innovation and dynamism among firms.

Mohamad *et al.* (2015) employed structural equation modelling to examine the relationship between firm performance and internal and external sources of finance in Malaysia and found that internal and external sources of finance have no significant effect on SMEs' performance. However, business experience, level of education and firm size have a positive effect on performance. Their findings highlight the relevance of nonfinancial factors in driving firm performance. Fowowe (2017) used subjective and objective measures of access to finance to examine whether firm growth is constrained by access to finance or not. The emerging evidence from the subjective measures of access to finance revealed that financial access barriers exert a significant negative effect on firm growth, whereas objective measures showed that firms that are not credit-constrained experienced growth compared to credit-constrained firms. Recent findings using the World Bank enterprise survey data suggest that lack of access to finance coupled with a weak business environment retards the growth of MSMEs in Uganda while benefiting large firms. Improvement in access to finance exerts a higher positive effect on MSMEs growth compared to large firms, however, the effect is not statistically significant (Lakuma *et al.*, 2019). Ratnawati (2020) found that financial inclusion has a direct and indirect influence on MSMEs' performance in Indonesia. The author argues that efforts to improve credit access for MSMEs will expand market share, the number of workers, sales and profit provided that these efforts are accompanied by increased financial intermediation and access to capital. Lee *et al.* (2020) concur that financial inclusion helps firms increase sales growth during normal times. However, the interaction of financial inclusion and financial innovation revealed that financial innovation exerts a negative effect on a firm's sales growth rate.

Apart from finance, firm performance is affected by managerial traits and characteristics (Andersson and Tell, 2009), publicly funded business advisory services (Cumming *et al.*, 2014), and other government guarantees (Pergelova and Angulo-Ruiz, 2014). Specifically, Pergelova and Angulo-Ruiz (2014) found that government guarantees and government equity have a direct effect on a new firm's competitive advantage but only an indirect effect on firm performance in the context of the USA. These results highlight the important role that business support services can play to assist new firms to build capabilities to successfully compete in the marketplace.

In summary, regardless of the limited scholarship, the growing evidence available suggests that the financial inclusion of MSMEs exerts a positive effect on performance. The empirical review has further highlighted the lack of empirical studies that have focused on the African context, with this study contributing to filling the gap.

4. Data source and variable definitions

Data for the study is sourced from FinScope MSME survey Eswatini 2017 developed by FinMark Trust [4]. The FinScope MSME Eswatini survey is a national representative sample of MSME owners who are at least 18 years old and generate an income through business activities. Also, such businesses must employ 50 people or fewer, including independent entrepreneurs. The FinScope MSME survey used a multi-stage sampling technique and a total of 3,024 interviews with MSME owners were conducted between October 4, 2016 and March 10, 2017. The main objective was to size and scope the MSMEs in Eswatini while describing the levels of both formal and informal financial access. FinScope has been

conducting financial inclusion surveys in the Southern African Development Community (SADC) since 2002 and their surveys provide a comprehensive coverage of the demand and supply sides of access and usage financial services by households and MSMEs (FinMark Trust, 2017). A full description of the variables is presented in Table 1 below.

5. Methodology
The study aims to examine the effect of financial inclusion on the performance of MSMEs in Eswatini. MSMEs' performance is measured using two proxies: firstly, the natural logarithm of MSMEs annual turnover profit. Although MSMEs are likely to under-report their annual turnover profit, annual turnover profit is preferred to the owner's perception of business performance. For example, *think about the last 12 months, would you consider your business to be very successful, fairly successful, struggling but promising, struggling but surviving and at risk or in danger of failing?* The second measure of performance is business development measure (BDM), which is a segmentation tool used to categorize MSMSEs (details in Table 1) based on a range of criteria such as formality, employment capacity, access to infrastructure, finance and many other indicators (FinMark Trust, 2017, p. 55). Financial inclusion variables are proxied using MSMEs' formal bank account, use of account for business purposes, stokvel, saving strands and formal insurance. See Table 1 for details.

5.1 The influence function and re-centered influence regression
At the firm level, we are interested in the annual turnover profit of MSMEs. Let $F(y)$ be the annual turnover distribution and let $v(F)$ be a distributional statistic, quantile in this study. The influence function (IF) of a distributional statistic $v(F)$, defined as $IF(y; v, F)$, is the first order directional derivate of $v(F)$. Assuming F and G are two distributions and under certain assumptions, G is close to F, $v(G)$ is close to $v(F)$, then the influence function of v at F is defined as:

Variables	Mean	Median	Kurt	Skew	SD	Min	Max
Log MSME annual turnover profit	10.7	11	4.8	0.6	1.4	7.1	19.8
Business development model	2.3	2	2.1	−0.5	0.7	1	3
MSMEs with bank account	0.7	1	1.9	−1.0	0.5	0	1
Save for business purposes	0.6	1	1.1	−0.3	0.5	0	1
Informal savings scheme	0.4	0	1.1	0.3	0.5	0	1
Strands of MSMEs savings	1.8	2	1.5	0.3	0.8	1	3
MSMEs insurance	0.2	0	3.1	1.5	0.4	0	1
Gender	0.7	1	1.5	−0.7	0.5	0	1
Marital status	0.7	1	1.5	−0.7	0.5	0	1
Couldn't find a job	0.3	0	1.7	0.9	0.5	0	1
Sale goods on credit sometimes	0.6	1	1.1	−0.4	0.5	0	1
Business keeps records	0.4	0	1.1	0.4	0.5	0	1
Education level of MSMEs	1.9	2	2.5	0.1	0.6	1	3
Business sectors	2.7	3	1.7	−0.3	1.1	1	4
Place business operation	1.7	1	1.8	0.6	0.8	1	3
Barriers to MSMEs operation	2.1	2	1.4	−0.2	0.9	1	3
Age of MSMEs owner	44.1	42	2.6	0.5	13.8	18	96
MSMEs registration status	0.2	0	3.4	1.6	0.4	0	1
Average days per week spend on business	0.7	1	1.9	−0.9	0.5	0	1
MSME main source of income	0.7	1	2.0	−1.0	0.4	0	1
Average hours work per day on business	0.7	1	1.5	−0.7	0.5	0	1
Source(s): By authors using FinScope MSME survey Eswatini 2017							

Table 1.
Definition of variables and summary statistics (N = 3024)

$$\text{IF}(y, v, F) = \lim_{\varepsilon \to 0} \frac{v(G) - v(F)}{\varepsilon} = \frac{\partial}{\varepsilon} v((1 - \varepsilon)F + \varepsilon\Delta_y)|_{\varepsilon=0} \tag{1}$$

The IF therefore measures the relative effect of a small perturbation in F on $v(F)$, that is, the influence function of a distributional statistic indicates how much the statistic would change following a small change in the underlying distribution. Thus, by adding the statistic $v(F_Y)$ to the influence function yields the recentered influence function (RIF) (Essama-Nssah and Lambert, 2016, p. 78; Firpo *et al.*, 2009, p. 954), defined as:

$$RIF\{y_i; \, v(F_Y)\} = v(F_Y) + IF\{y_i; \, v(F_Y)\} \tag{2}$$

Equation (2) represents the RIF which Firpo *et al.* (2009, p. 956) formally defined as the first two leading terms of the linear approximation which indicates the relative contribution of observation y_i on the construction of the statistic v. The IF and RIF are widely used tools in statistical and econometric analysis and have recently been popularized in the estimation of RIF regressions (Firpo *et al.*, 2009; Heckley *et al.*, 2016). Rios-Avila (2020) provides a full explanation of the intuition behind RIF regression. We focus only on the core equations for the sake of brevity.

Firpo *et al.* (2009) proposed and used the RIF as a strategy to estimate unconditional quantile regression using linear models to estimate the unconditional partial effect (UPE) of a small change in the distribution of the independent variables on the distributional statistics v (see Rios-Avila, 2020). The estimation of RIF varies in complexity depending on the distributional statistic of interest, such as the mean, variance, Gini coefficient and quantiles in the case of this study. For a known quantile, τ^{th}, the RIF is defined as:

$$RIF\left(y_i, q_\tau, F_Y\right) = q_\tau + \frac{(\tau - 1\{Y \le q_\tau\})}{f_Y(q_\tau)} \tag{3}$$

Where y_i is the outcome variable (i.e. log annual turnover profit), q_τ is the value of the outcome variable at the quantile τ, F_Y is the cumulative distribution function of Y_i, $1\{Y \le q_\tau\}$ is a dummy variable which indicates whether the outcome variable is below q_τ, and $f_y(q_\tau)$ is the density of Y_i, at q_τ, and is estimated using kernel or other methods. Assuming a linear relationship between $RIF(y_i, q_\tau, F_Y)$ and the explanatory variables X, the RIF regression can be estimated using an OLS after the transformation with RIF as the dependent variable run on the covariates (Firpo *et al.*, 2009).

$$RIF\{y_i, q_\tau, v(F_Y)\} = X'\beta_\tau + \varepsilon_i^\tau, \quad E(\varepsilon_i) = 0 \tag{4}$$

Finally, the unconditional partial effect of the statistic v is derived by first taking unconditional expectations on both sides of Equation (4):

$$v(F_Y) = E\left(RIF\left(y_i, q_\tau, v(F_Y)\right)\right) = E(X'\beta_\tau) + E(\varepsilon_i^\tau) = \overline{X}'\beta_\tau \tag{5}$$

Where $\overline{X}$ is the unconditional mean of X, the unconditional partial effect (UPE) is given by:

$$\frac{\partial v(F_Y)}{\partial \overline{X}_K} = \beta_k \tag{6}$$

The interpretation of the UPE is that if the distribution of x_K changes such that the unconditional average increases by one unit $(\Delta \overline{X}_K = 1)$, the expected change in the distributional statistic is equal to β. This framework is implemented in Stata using *rifhdreg*, a

user-written command (Rios-Avila, 2020) and the standard errors are bootstrapped with 100 replications and clustered along with the age of MSME owners.

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5.2 Generalized ordered logit for ordinal dependent variables (gologit)

We used a second methodology to understand how financial inclusion influenced MSMEs' performance using business development measures that categorize MSMEs into three groups: least developed, emerging and most developed businesses. Our dependent variable has three ordinal categories, and the most commonly used techniques are ordered logit or proportional odd model. The ordered logit model is based on very strong assumptions of parallel lines which are often violated (Williams, 2006, 2016). That is, other than differences caused by sampling variability, the ordered logit model assumes that, for each cumulative logit model that can be estimated, the effect of X on Y should be the same except for the intercepts (Williams, 2016, pp. 9 and 15). It is obvious for one or more β's to differ across values of j, making the parallel-lines assumption very restrictive (Williams, 2006, p. 60).

To address some of these challenges, we employ the generalized ordered logit (gologit) model that selectively relaxes the ordered logit assumption only as needed, thereby producing results that do not violate the parallel-lines assumption (Williams, 2006, 2016). The major advantage of the gologit model is that it can fit three special cases of the generalized model: the proportional odds/parallel-lines model, the partial proportional odds model and the logistic regression model. The researcher has the flexibility to use several specifications of the gologit model. For example, the autofit option can be used to test the parallel-lines assumption and identify partial proportional odds models that fit the data. Furthermore, the parallel-lines (pl) and nonparallel-lines (npl) options can be specified when the researcher wants to gain greater control of the final specification (Williams, 2006, p. 59). The generalized ordered logit model can be specified as:

$$P(Y_i > j) = g(X\beta_j) = \frac{exp(a_j + X_i\beta_j)}{1 + \{exp(a_j + X_i\beta_j)\}}, j = 2, \ldots \ldots M - 1 \tag{7}$$

Where M is the number of categories of the ordinal dependent variable. When $M = 2$, the gologit model is equivalent to the logistic regression model, and when $M > 2$, the logistic model becomes equivalent to a series of binary logistic regression where categories of the dependent variables are combined. For example, when $M = 3$, then $J = 1$, category 1 is contrasted with categories 2 and 3; for $J = 2$, the contrast is between categories 1 and 2 vs 3; and for $J = 3$, it is categories 3 vs. 1 and 2 (Williams, 2006, p. 59).

Thus, the estimated gologit model is specified as:

$$Y_i = \alpha_0 + \beta_1 FI_i + \beta_2 X_i + \mu_i \tag{8}$$

Where y is business development measure, FI denotes five aspects of financial inclusion, X_i is a set of control variables as defined in Table 1, and μ_i is the error term. In the interests of space, only the marginal effects of the financial inclusion variables are reported and discussed. The model is estimated using Williams' (2006) user-written Stata routine gologit2.

6. Discussion of results

6.1 Recentered influence function (RIF) – regression

We included a standard OLS output as a baseline to the unconditional quantile regression estimated using the RIF-regression framework. From the six OLS models estimated, only MSME bank account, MSME saving for investment purposes and formal saving have a positive and significant effect on MSME annual turnover profit. A major limitation of OLS is

that it provides only the average effect of the target variable on the outcome variable but fails to capture how changes in the target variable affect the distribution of the outcome variable. We circumvent this limitation by using the RIF framework to estimate the UPE that captures how small changes in financial inclusion will affect MSME annual turnover profit.

Our results revealed that at the 10th and 25th quantiles of MSME annual turnover, small changes in access to bank account have a negative and insignificant effect on annual turnover profit. However, at the 50th and 75th percentiles, small changes in MSME access to a bank account exert a positive and statistically significant effect on annual turnover. The economic implications of our results are that if MSME access to a bank account increases by 1% at the 50th and 75th percentiles, annual turnover profit would increase by 0.03% ((0.345/11.09*0.01) *100) and 0.02% ((0.262/11.68*0.01)*100), respectively. A similar pattern is observed for saving for business expansion, formal and informal saving/stokvel for MSMEs at the 50th and 75th percentile of annual turnover. Following the same interpretation, a 1% increase in formal saving for business expansion will increase MSME annual turnover profit at the 50th and 75th percentiles by 0.03%, while at the 10th and 25th percentiles, a 1% increase in formal insurance reduces MSME annual turnover profit by 0.01% but increases annual turnover profit by 0.01% at the 75th percentile. Thus, the enabling effect of financial inclusion on MSME performance is concentrated at the 50th and 75th percentile of the distribution (Refer Table 2).

MSME at the 10th to the 40th percentiles of the annual turnover are likely to be categorized into the least developed businesses category, highly informal with no employment capacity beyond the owner. Conversely, MSME at the 50th to 75th percentile will fall in the small business and medium-sized businesses classified as emerging and most developed businesses. In terms of size, this corresponds to micro businesses employing one–three employees, small businesses with four–ten workers and medium businesses employing 11–50 employees as discussed in Section 2.

These results provide important insights for strategic resource allocation and targeted policy intervention by the government of the Kingdom of Eswatini. For instance, more financial resources should be allocated to MSMEs with employment creation potential, such as small businesses and medium businesses located on the 50th to 75th percentiles, to enable these enterprises to take advantage of economies of scale. This will help to address the social challenges of rising unemployment among youth and women. On the other hand,

	OLS	RIF(q10)	RIF(q25)	RIF(q50)	RIF(q75)	RIF(q90)
MSME bank account	0.280***	−0.006	−0.006	0.345***	0.262***	0.131
	(4.46)	(−0.35)	(−0.44)	(6.96)	(8.36)	(1.24)
Save for business	0.178***	−0.008	−0.008	0.223***	0.200***	−0.031
	(3.12)	(−0.56)	(−0.53)	(4.31)	(4.03)	(−0.33)
Formal saving	0.261***	−0.014	−0.014	0.353***	0.302***	−0.030
	(3.85)	(−0.66)	(−0.89)	(6.07)	(5.78)	(−0.25)
Informal saving	−0.034	−0.007	−0.007	0.158***	0.110*	−0.201
	(−0.48)	(−0.36)	(−0.36)	(2.89)	(1.88)	(−1.45)
Stokvel	0.003	−0.013	−0.013	0.117**	0.067*	−0.226**
	(0.05)	(−0.75)	(−1.02)	(2.32)	(1.66)	(−2.02)
Formal insurance	0.056	−0.078***	−0.078***	0.074	0.129**	0.106
	(0.74)	(−4.14)	(−4.59)	(1.09)	(2.24)	(0.90)
No of observations	2583	2583	2583	2583	2583	2583
RIF (mean)		9.71	9.95	11.09	11.68	13.08

Note(s): NB. The *t*-statistics are in parenthesis, *, **, *** represent 10%, 5% and 1% respectively
Source(s): By authors

Table 2.
The effect of financial inclusion on annual turnover: RIF regression output

non-financial resources such as basic business management skill training, business networking and market research should be targeted at independent entrepreneurs and a mix of financial and nonfinancial resources at micro-businesses. These two categories of MSMEs are instrumental in household wealth creation and addressing rising income inequality and unemployment, especially during the COVID-19 era. The MSME landscape in Eswatini mirrors the business life cycle development, and identification of the financial and non-financial needs at each stage of the cycle is central to the successful development of a viable MSME sector.

6.2 Gologit results

We use a business development measure that categorizes MSMEs as least, emerging and most developed businesses and employs a generalized ordered logit model to examine the likelihood of MSMEs being classified into any of these categories as a result of access and use of financial services. Again, only the coefficient for the financial inclusion variables is reported.

All the models were estimated using autofit and force option while the parallel lines assumption was tested at a 0.05 level of significance. The Wald test of the parallel lines assumption for all the models reported at the bottom of Table 3 is insignificant, meaning that the final model does not violate the proportional odds/parallel lines assumption. The Wald test statistics are the average for all five models reported, however, full results are available on request. The *mchange* [5] using Long and Freese's (2014) user-written Stata command was used to compute discrete changes. From Table 3 marginal change from no access to access to a bank account reduces the likelihood of MSMEs being classified as least developed (informal) businesses by 25.1% and increases the chances of MSMEs being classified as emerging and most developed businesses by 10% and 15.1%, respectively.

As for the usage of financial services, a marginal change from not saving to saving for business expansion reduces the chances of MSMEs falling in the least developed group by 20.1% and increases the probability of MSMEs belonging to emerging and most developed business groups by 12.7% and 7.4%, respectively. Comparing modes of saving, MSMEs that save informally as opposed to formal saving are 18.7% more likely to be classified as least developed business and 8.1% and 10.6% less likely to belong to emerging and developed business categories respectively. Similarly, a marginal change in formal insurance status equally has a substantial effect on MSMEs' chances of being classified into any of the three

Marginal effects (ME)	Most developed businesses	Emerging businesses	Least developed businesses
MSME with a formal bank account	0.151***	0.100***	−0.251****
Save money for business purposes	0.074***	0.127***	−0.201***
Stokvel saving scheme for business	−0.009	0.118***	−0.109***
Informal saving vs formal saving	−0.106***	−0.081***	0.187***
Not saving vs formal saving	−0.105***	−0.235***	0.341***
Not saving vs informal saving	0.001	−0.155***	0.154***
Formal insurance	0.083***	0.152***	−0.236***
No. of observations	2,894	2,894	2,894

Note(s): Pseudo R-Squared (average) 0.36
Wald test, χ^2(16) (average) 18.7
Prob > χ^2 (average) 0.41
*, **, *** represent 10%, 5% and 1% respectively
Source(s): By authors

Table 3.
Marginal effects of financial inclusion on business development measure

business groups. That is, a marginal change from non-insured to insured MSME businesses reduces the likelihood of MSMEs belonging to the least developed business group by 23.6% and increases the probability of being classified as emerging and most developed businesses by 15.2% and 8.3%, respectively.

Overall, MSMEs that have access to a bank and use this access to save for business expansion as well as having their businesses insured against risk have higher probabilities of being classified into the emerging and most developed business categories. However, informal savings, stokvel and not saving increase the likelihood for MSMEs to be downgraded into the least developed business category.

Although scholarly research in this area is limited, our results corroborate previous findings such as those by Ayygari et al. (2010, 2011), Butler and Cornagia (2011), Khandker et al. (2013), Lakuma et al. (2019), Lee et al. (2020), Ratnawati (2020) and Degryse et al. (2013). That is, access to formal finance accelerates firm growth, and increases productivity and the decision to start a microenterprise. Furthermore, our result corroborates the results of Beck et al. (2015) at the 10th to 40th percentiles but contradicts them at the 50th and 75th percentiles of the distribution. This provides interesting insights of enabling role of financial inclusion in enhancing the performance of microenterprises with important implications for policymakers in the Kingdom of Eswatini.

7. Conclusions

The main objective of this study was to examine the effect of financial inclusion on MSMEs' performance in the Kingdom of Eswatini using the FinScope MSME survey Eswatini 2017. Descriptive statistics showed that approximately 75% of MSMEs in Eswatini are independent entrepreneurs, 18% are micro-businesses, 6% are small businesses and 1% are medium-sized businesses. Females head up 85% of the MSMEs and are mostly concentrated in the independent entrepreneur category, and the proportion of females declines rapidly reaching 0.6% in the medium-sized business category. Small businesses employing five plus employees emerged as the engine of job creation, followed by medium-size businesses. The high concentration of MSMEs in the independent entrepreneur category partly explains the poor performance of the sector in poverty alleviation through job creation.

The unconditional quantile regression analysis revealed that access to and use of financial services has a varying effect on MSME annual turnover profit. At the 10th to 40th quantiles, small increments in formal and informal financial inclusion have no effect on annual turnover profit with the exception of formal insurance. That is, small increases in insurance at the 10th and 40th percentiles reduces annual turnover profit, thus capturing the affordability issues of formal insurance at the lower quantiles. However, at the 50th and 75th percentiles, small changes in financial inclusion exert a positive and statistically significant partial effect on annual turnover profit.

The generalized ordered logit confirmed the unconditional quantile regression analysis. That is, financial inclusion reduces the likelihood of MSMEs being classified in the least developed business group and increases the chances of MSMEs upscaling into emerging and most developed business groups. This is the case of formal financial inclusion of MSMEs but informal saving, stokvel and not saving increases the probability of MSMEs being trapped in the least developed business category. Our results contribute to the scant literature on the enabling role of financial inclusion on MSME performance in Africa, specifically in Eswatini, and these findings are relevant for targeted policy interventions.

The policy implications vary depending on the developmental stage that the MSME is in the business development life cycle. For MSMEs at the 50th to 75th percentiles, improving access to quality and affordable financial resources is essential to enhance job creation capability. A government MSME Partial Credit Guarantee Scheme would be an ideal

institution to improve access to quality and affordable credit. Secondly, for independent entrepreneurs, the emphasis should focus on developing business skills such as basic financial management, business network, market research and overall business management. Finally, for micro-businesses, a mix of financial and capability development to support upscaling to medium-size enterprises should be provided. A holistic support system would ensure that the MSMEs' support is tailored-made to the needs of MSMEs at a particular stage of business development.

Notes

1. MSMEs are defined by the number of employees as per the SMME Policy of 2009: independent entrepreneurs (zero employees), micro-businesses (1–3 employees), small businesses (4–10 employees) and medium businesses (11–50 employees) (FinMark Trust, 2017, p. 5).

2. Fully constrained MSMEs find it challenging to access credit, and partially constrained MSMEs are those that have been successful in accessing partial external finance (IFC, 2017).

3. https://www.smefinanceforum.org/data-sites/msme-finance-gap

4. FinMark Trust is an independent nonprofit trust with the purpose of "Making financial markets work for the poor, by promoting financial inclusion and regional financial integration in Africa" (https://finmark.org.za/about).

5. *mchange* uses margins to compute marginal effects for a regression model.

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