



Mapping the Pathways to Success: SEM-PLS Analysis of Factors Influencing SME Growth in Tanzania

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Abstract: This paper systematically advocates the determinants influencing Small and Medium Enterprises (SMEs) in Tanzania, specifically on potential business ecosystem elements which include Accessibility to Finance (AF), Market accessibility and Competition (MAC), Entrepreneurial Skills and Management (ESMC) capacity, as well as Regulatory requirements (RR). The study used a mixed study design and employed Structural Equation Modelling (SEM) and Partial Least Squares (PLS) to analyze data collected from 125 random samples from SME owners in Mwanza and Arusha City. Smart PLS software was used to analyze data from a structured questionnaire to realize the study's objective. The results highlight Access to Finance as the most substantial determinant of SME growth, followed by Market Access and Competition. Entrepreneurship skills and the ability to manage an enterprise have a positive influence but possess a relatively weak association, whereas Regulatory Requirements demonstrated modest effects. The proposed mechanisms to ensure the expansion and scalability of SMEs in Tanzania are directed to laws and policymakers, as well as other development partners to intervene in all analyzed, construct to smooth financial inclusiveness, invest in research to discover market opportunities, adjust SMEs' legal structure to provide conducive entrepreneurial ecosystem, as well as establishment of entrepreneurship development programs to upgrade creativity, innovation and management capacity for SMEs growth and Sustainability.

Keywords: Small and Medium Enterprises (SMEs), Structural Equation Modeling (SEM), Access to Finance, Market Access, Entrepreneurial Skills, and Regulatory Requirements.

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1. Introduction

From a global perspective, SMEs occupy 90% of the entire business system and create 50% of job opportunities (World Bank Group, 2019). They utilize local and

international economic resources across all sectors, including trade, services, manufacturing, farming, and merchandise (Diao et al., 2020). In Tanzania, similar to other developing economies aiming for strong growth, the impact of Small and Medium-sized Enterprises (SMEs)

cannot be underestimated, as they serve as key drivers of economic development, foster innovation, and create potential employment opportunities (Al-Haddad et al., 2019; Gherghina et al., 2020; and Hu 2010).

Through value creation, SMEs play significant roles in transforming economic resources into valuable items with potential for consumption (Rashidirad & Salimian, 2020). In the agricultural sector, SMEs contribute about 50% of national income and generate 60% of foreign revenue (URT, 2003). Hence, they increase the financial value of the country's goods and services, resulting in a growing Gross Domestic Product (GDP). This catalyzes economic development and growth and creates opportunities such as employment and competition for business sustainability (Južnik Rotar et al., 2019). According to Ussif & Salifu (2020), most low-income earners are employed, generate income, and add value to large industries, resulting in GDP growth. Therefore, they act as vibrant drivers for poverty alleviation and overall social growth (Manzoor et al., 2019, and Amoah et al., 2022). It significantly creates more than 5.2 million jobs and helps individuals generate income within the value chain process (Gamba, 2019, and Mkenda & Rand, 2020).

The evolution and sustainability of SMEs in Tanzania depend on the entrepreneurial ecosystem, which encompasses determinant factors such as finance and market access and the potential for systematic movement (Turekulova et al., 2022). Financial resources are the lifeblood that enables other operations to be carried out more easily, facilitating innovation, investment, expansion, growth, and sustainability (Amadasun & Mutezo, 2022). Changes in market opportunities create competitive advantages that encourage small entrepreneurs to invest in innovation for future sustainability and growth (Amadasun & Mutezo, 2022). Entrepreneurial skills and management capabilities are the catalysts of value creation for SMEs, which significantly adjust both novel and redundant ecosystem constraints (Sariwulan et al., 2020; Pulka et al., 2021). Therefore, the regulatory structure establishes a strong foundation for safe and efficient business practices that characterize the overall entrepreneurial environment (Mallett et al., 2019; Nyondo, 2022; Graafland & Bovenberg, 2020).

Numerous SMEs face challenges that hinder growth and sustainability, including limited access to finance, complex credit terms, and inadequate training in business management (Magembe, 2019; Kamanga & Mwaikambo, 2020). Nkwabi & Mboya (2019a), Lobo et al. (2020), and Popescu et al. (2020) assert that market proximity, competitive dynamics, price fluctuations, demand shifts, a lack of appropriate entrepreneurship training, and an insufficient entrepreneurial culture are significant issues that impede SMEs' progress. Poorly established legal and

regulatory systems also prevent small entrepreneurs from complying with business environmental guidelines (Masanja, 2019).

To advocate for these challenges, Mwombeki (2023) conducted a study on the factors influencing revenue growth for SMEs in Tanzania using the Pooled Ordinary Least Squares model, highlighting that aspects such as regulations, tax charges, affordability of finance, and professional teams have a substantial effect on firms' revenue growth. Meanwhile, Shangwe (2019) researched the factors affecting SME growth in Kinondoni Municipal, Tanzania, employing correlation and multiple regression, and discovered that inadequate levels of capital impact the progress of SMEs, the originality of enterprises, and distinct entrepreneurial traits. Additionally, using the SEM model, Ismail (2022) investigated the mediating effect of personal qualities on establishing and developing small businesses in Tanzania. He found that personal behaviors facilitate the relationship between entrepreneurial inspirations and the progress of SMEs.

Therefore, some prior studies have utilized models such as Pooled Ordinary Least Squares (POLS), which are ineffective for the fitness and accuracy of data analysis due to their inflexibility in accommodating complex and latent variables, as well as multiple interdependent factors (Nazim & Ahmad, 2013). The application of SEM-PLS over correlation and regression facilitates the modeling of measurement errors and unexplained variances, tests the associations of variables simultaneously, provides connections between micro and macro variables, and is regarded as the best model for theory development and, consequently, the best for construct analysis (Nunkoo et al., 2013).

Therefore, the study aimed to analyze the factors influencing the growth of Small and Medium Enterprises in Tanzania. It specifically explored SEM-PLS to reveal the complex relationship among four fundamental measurable factors: accessibility of financial resources, entrepreneurial skills and management capacity, market access and competition, and the regulatory environment in Tanzania. This analysis provides a comprehensive understanding of which determinants significantly facilitate SME growth.

2. Literature Review

The increasing interest in SMEs' growth for economic development has become an important area of study in recent years. Numerous authors have examined various concerns regarding SME development perspectives in their countries. This trend began years ago when Govori (2013) discovered important factors for SME growth: access to

finance, competition, corruption, and government policies in Kosovo. Amaradiwakara & Gunatilake (2016) revealed that financial inadequacy, unadaptability to new technology, and specific government regulations are blocking factors in Sri Lanka. Lastly, Nkwabi & Mboya (2019b) identified financial constraints, capital constraints, poor technology, and restrictive regulations that hinder SME growth in Tanzania. These findings underscore the need to prioritize the most scrutinized influential factors affecting SME growth in Tanzania by analyzing the theories that guide this study.

2.1 Theoretical Review

This part presented the fundamental theory that is relevant to the study objectives. Theories designated to guide the study objectives include the theory of the growth of the firm, the theory of the growth of the small business, and the legal environment implications for the growth of small businesses

2.1.1 The Theory of the Growth of the Firm

The philosophy of the firm's growth was first pioneered by Edith T. Penrose in 1959, emphasizing the utilization of resources and management capabilities (Nair et al., 2008). This theory explains that for a business to grow and prosper, unique opportunities are fundamental to its performance. It defines the firm's growth as the continuous practice through which a business evolves throughout its entire life cycle, from introduction and maturity to overall performance, subject to networking on local and international scales (Erkan, 2023). The firm's growth depends on the opportunity to make a profit, reasonable access to finance for investments and operations, and high-quality productive skills for entrepreneurial acumen (Fuentes-Callen & Cuellar-Fernandez, 2019; Naeem & Li, 2019).

2.1.2 The Theory of Small Business Growth

This theory encompasses important elements that facilitate discussion, recommendations, and conclusions. It was first introduced by Schumpeter and Nichol in 1934 and laid the foundation for understanding entrepreneurship, innovation, and economic development of the firm, followed by contributions from Penrose in 1959, Lucas in 1978, and Barney in 1991 (Hafiz et al., 2021). Although there is no single theory of the growth of small businesses, various theories describe the concept, including the resource-based approach, knowledge-based approach, dynamic capabilities approach, and resource-dependency model.

The resource-based model explains the fundamental implications of firms' performance based on the resources

and competencies available within the organization (Freeman et al., 2021). It views culture, trust, human resources, and technology development as vital for businesses seeking sustainability and creating competitive strength against rival firms (Barney & Delwyn, 2007; Ballestar et al., 2020). As a key driver of other business infrastructures, human resources are essential in making strategic decisions on various business practices that contribute to value creation under best practices, thus promoting growth (Mahapatro, 2021; Gerhart & Feng, 2021). Technology serves as the catalyst through which all business interactions and market expansion are efficiently carried out (Jafari-Sadeghi et al., 2021), enhancing innovation (Lee et al., 2019) and helping to reduce operational costs (Attaran & Woods, 2019). Therefore, financial resources are an important input for fully utilizing listed resources (Zarrouk et al., 2020).

Resource-dependency theory describes how firms rely on resources acquired from the external environment of the enterprise (Davis & Cobb, 2010). It suggests that enterprises should not operate in isolation from the resources of other firms in the long term. The interdependence of enterprises on resources facilitates the exchange of potential operational inputs, supporting sustainability and growth (Sarkis et al., 2010). Ahmad (2019) outlines three RDT parameters: concentration, resource availability uncertainty, and interconnectedness. It underscores the importance of fostering mutual relationships among firms to exploit the unique opportunities that their respective enterprises hold and to enhance flexibility in response to environmental uncertainties (Celtekliligil, 2020).

The knowledge-based model of small business growth highlights the importance of applying knowledge within an enterprise to create value through the transformation process in production activities (Kengatharan, 2019). Grillitsch *et al.* (2019) identify three types of knowledge essential for business growth: analytical knowledge, which pertains to an individual's ability to assess and evaluate issues related to a specific subject matter; synthetic knowledge, which emphasizes the ability to differentiate between contexts; and symbolic knowledge, which refers to an individual's capability to communicate using symbols, codes, and concepts. In business growth, Cutagya n.d. demonstrates that analytical knowledge enables business managers to make informed decisions for the organization.

Dynamic capability theory. Bhardwaj & Srivastava (2024) defined dynamic capability as the ability of enterprise management to maintain alert behavior in recognizing, assessing, and utilizing available opportunities through the integration of emerging chances to thrive in a competitive ecosystem. Therefore, dynamic capability theory focuses on enterprise managers' ability to

embrace continuous change in an entrepreneurial ecosystem (Khurana et al., 2022). It emphasizes the importance of applying managerial capability to absorb shocks at all stages of business operations, including identifying challenges and opportunities, responding quickly to novel and redundant information, and executing managerial decisions effectively to implement changes that overcome risky enterprises (Ferreira *et al.*, 2020). Hence, the theory posits that a small business is viewed as a growing organization if it fosters innovation, conquers potential market competition, streamlines value, and sustainably achieves its strategic focus (Linde *et al.*, 2021).

The legal environment of business provides guidelines that individuals and companies follow to safeguard the public interest. To protect businesses from failure and facilitate growth opportunities, the legislature enacts laws that govern the rights and responsibilities of individuals and companies; the judiciary interprets these laws, and the executive enforces them (Fields & Fields, 2022). This legal environment offers directors and business owners insights to manage risks and make decisions based on the scope of legal doctrine (Melvin & Guerra-Pujol, 2017). Despite the government's role in regulating businesses by promoting innovation in small enterprises to protect the environment, it is generally influenced by corruption, selfishness, collusion, nepotism, and conflicts of interest (Chaniago, 2021).

3. Methodology

This section details the study's approach, including the design, population, sampling, data collection instruments, the validity and reliability of the model, statistical treatment of the data, and ethical considerations.

3.1 Study Design

The study employed a mixed-methods design, facilitating the gathering of qualitative data and quantitative analysis to describe results comprehensively in numbers and words (Creswell & Creswell, 2018). This approach was deemed appropriate as it thoroughly narrates the study results and minimizes biases associated with using a single methodology for the study description (Sharma, 2023). A cross-sectional study design was implemented to collect random data from respondents simultaneously.

3.2 Population and Sampling

Since there are more than three million (3 million) small businesses in Tanzania (URT, 2012), the study randomly selected 125 SME managers and practitioners across various SME sectors in Mwanza City and Arusha City, providing comprehensive insight into the factors influencing SME growth in Tanzania. These regions were chosen because they have the fastest-growing business activities, with numerous SMEs investing in trade, services, and manufacturing (URT, 2022).

3.3 Instruments

The study employs a structured questionnaire to collect data from SME managers and practitioners. This questionnaire encompasses well-defined and operationalized variables, with assigned indicators and codes that standardize both the measurement and interpretation of the variables most influential to SME growth. Respondents provided structured answers using a 5-point Likert scale, categorized as Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree, as shown in the tables below.

Table 1: Operational Variables of Access to Finance

Construct	Definition	Indicator	Code	Measurement Scale
Access to Finance	Reflects the ease with which SMEs can obtain the financial resources necessary for their operation and growth	Availability of credit facilities	AF1	Likert Scale
		Interest rates on loans	AF2	Likert Scale
		Terms and conditions of financing	AF3	Likert Scale
		Access to non-traditional financing options	AF4	Likert Scale

Table 2: Operational Variables of Market Access and Competition

Construct	Definition	Indicator	Code	Measurement Scale
Market Access and Competition (MAC)	Represents the SMEs' ability to enter new markets and face competition.	Market information availability	MAC1	Likert Scale
		Access to distribution channels	MAC2	Likert Scale
		Level of competition in the market	MAC3	Likert Scale
		Market diversification opportunities	MAC4	Likert Scale

Table 3: Operational Variables of Entrepreneurial Skills and Management Capacity

Construct	Definition	Indicator	Code	Measurement Scale
Entrepreneurial Skills and Management Capacity (ESMC)	Covers the competencies and managerial capabilities within SMEs that contribute to their growth.	Entrepreneurial training and education	ESMC1	Likert Scale
		Experience in business management	ESMC2	Likert Scale
		Decision-making capabilities	ESMC3	Likert Scale
		Innovation and adaptability skills	ESMC4	Likert Scale
		Leadership and team management skills	ESMC5	Likert Scale
		Strategic Planning Skills	ESMC6	Likert Scale

Table 4: Operational Variables of Regulatory Environment

Construct	Definition	Indicator	Code	Measurement Scale
Regulatory Environment (RE)	Pertains to the influence of government policies and regulations on SME operations	Clarity and stability of regulatory policies	RE1	Likert Scale
		Ease of business registration and licensing processes	RE2	Likert Scale

Taxation policies and incentives for SMEs	RE3	Likert Scale
Compliance costs and procedures	RE4	Likert Scale
Government support programs	RE5	Likert Scale
Intellectual property protection	RE6	Likert Scale

Table 5: Operational Variables of SME Growth

Construct	Definition	Indicator	Code	Measurement Scale
SMEs Growth (SG)	Refers to the overall development and extension of small and medium-sized enterprises (SMEs) over time, characterized by improvements in various aspects of business performance and sustainability	Revenue Growth	SG1	Likert Scale
		Asset Growth	SG2	Likert Scale
		Profitability	SG3	Likert Scale
		Employment Growth	SG4	Likert Scale
		Customer Base Expansion	SG5	Likert Scale

3.3.1 Validity and Reliability of the Model

Before the Structural Model assessment of SME prospects, the validity and reliability of the Structural Equation Modelling (SEM) using Partial Least Squares (PLS) were examined to test the efficiency of model constructs, validate gathered data, and support the conclusions drawn from the study. Content validity was used to review the instruments, and a pilot study was conducted to ensure the relevance of the data. Additionally, face validity was applied to evaluate the appropriateness of the questions. Cronbach's alpha measured the reliability of the model. Therefore, internal reliability, convergent validity, and discriminant validity were assessed thoroughly to strengthen the SME assessment model.

3.3.1.1. Internal Reliability

The internal reliability provides an impression of the extent to which model indicators consistently measure the research construct. Therefore, Cronbach's alpha and composite reliability scores (rho_a), with values above 0.7, are commonly considered acceptable, representing a reliable measurement of the underlying construct (Hair Jr

et al., 2020a).

Table 6 presents the internal reliability of the constructs, showing a high level of reliability. Most constructs exceed the recognized minimum value of 0.70 for both Cronbach's Alpha and Rho_A. This indicates that, for most constructs, the indicators used to measure consistency in the study provide accurate measurements and reflect a unified fundamental concept (Hair Jnr et al., 2010). However, some exceptions exist where specific constructs may not meet this threshold, suggesting potential issues with internal consistency.

For example, the Entrepreneurial Skills and Management Capacity (ESMC) concept has a Cronbach's alpha value of 0.624, which is below the conventional threshold. This indicates that the indicators related to this variable may not reliably measure the intended underlying concept. Consequently, some variables do not meet the generally accepted measurement standards.

Convergent Validity was measured by using Average Variance Extracted (AVE), where a least value of 0.5 or higher shows that the average is more than half of the

variance, which justifies the perfection of the model. This validation assures that variables are close, associated, and effective in the respective construct (Hair Jr *et al.*, 2020b). The AVE values for the entire constructs exceed the minimum limit of 0.5, as revealed in Table 6. Despite the Cronbach's alpha value for ESMC being 0.624, slightly below the conventional threshold, the AVE value for ESMC remains strong at 0.724. This suggests strong convergent

validity, signifying that the indicators of each construct excellently capture the variance of the construct intended to be measured. Significantly, strong convergence for the model validation ensures that the individual construct is precisely signified by its indicators. Hence, it reinforces the integrity of the measurement model and increases confidence in the research findings (Hair Jr *et al.*, 2016).

Table 6: Construct Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AF	0.790	0.805	0.877	0.704
ESMC	0.624	0.652	0.839	0.724
MAC	0.787	0.809	0.874	0.698
RE	0.791	0.798	0.878	0.705
SG	0.864	0.873	0.903	0.651

3.3.1.2 Discriminant Validity

The results shown in Table 7 adhere to the Fornell-Larcker Criterion which states that the dissimilarity of one modal construct to another is recognized if the square root of the average variance extracted is larger than the correlation between each construct that quantifies the discriminant validity of the latent variables to avoid multicollinearity concerns (Hamid *et al.*, 2017). The highest values within their respective rows and columns are as follows: 0.839 for

Access to Finance (AF), 0.851 for Entrepreneurial Skills and Management Capacity (ESMC), 0.835 for Market Access and Competition (MAC), 0.840 for Regulatory Environment (RE), and 0.807 for SMEs Growth (SG). These results indicate strong discriminant validity for each construct, sharing more variance with indicators than others in the model. This shows the empirical distinctiveness of the constructs, affirming that they measure distinct concepts within the structural model (Fornell & Larcker, 1981).

Table 7: Discriminant validity Fornell-Larcker Criterion

	AF	ESMC	MAC	RE	SG
AF	0.839				
ESMC	0.608	0.851			
MAC	0.729	0.548	0.835		
RE	0.665	0.727	0.521	0.840	
SG	0.736	0.587	0.613	0.684	0.807

Determination of appropriate indicators.

To guarantee the strength and validity of the study results, proper indicators for each concept were defined by evaluating loading factors based on respective dormant variables. To refine the indicators for analysis, we applied a criterion where indicators were required to have a minimum outer loading value of 0.708 for strength and reliability (Hair *et al.*, 2012). Indicators with outer loadings below 0.40 were automatically excluded from consideration. A comprehensive analysis was conducted for indicators with values between 0.40 and 0.708 to assess the impact on the Average Variance Extracted (AVE) and Composite

Reliability (CR) metrics upon omission.

Table 8 displays indicators that meet the required threshold and fall within the minimum outer loading range of 0.40 to 0.708 for strength and reliability in the study. These include AF1, AF2, AF3, ESMC2, ESMC5, MAC1, MAC2, MAC4, RE2, RE3, RE5, SG1, SG2, SG3, SG4, and SG5. However, indicators that did not meet the required values were omitted to ensure that each indicator accurately represented the original construct, thereby enhancing the overall reliability and validity of the measurement model.

Table 8: Represent Outer Loading Indicators

Indicators	AF	ESMC	MAC	RE	SG
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AF1	0.833	0	0	0	0
AF2	0.893	0	0	0	0
AF3	0.788	0	0	0	0
ESMC2	0	0.808	0	0	0
ESMC5	0	0.891	0	0	0
MAC1	0	0	0.819	0	0
MAC2	0	0	0.879	0	0
MAC4	0	0	0.805	0	0
RE2	0	0	0	0.876	0
RE3	0	0	0	0.830	0
RE5	0	0	0	0.813	0
SG1	0	0	0	0	0.714
SG2	0	0	0	0	0.838
SG3	0	0	0	0	0.764
SG4	0	0	0	0	0.820
SG5	0	0	0	0	0.886

To confirm that the study provides valid and reliable results, the study used refined indicators that reveal a strong and significant relationship with the respective construct. This helps to provide a demanding and trusted analysis of the determinants of SME growth.

3.4 Statistical Treatment of Data

Data was collected randomly from 125 samples, and Structural Equation Modelling (SEM) and Partial Least Squares (PLS) were utilized to scrutinize the strength of individual variables' influence on SME growth. Smart PLS software was used to analyze data to align with the study's objective. Confirmatory Composite analysis was used to measure and assess the model, and a Multicollinearity test was used to unlock

3.5.1 Structural Model Assessment

The study utilized the Structural Equation Modeling (SEM) to scrutinize factors affecting SMEs in Tanzania by converging on an explicit set of variables, including Finance accessibility, Market accessibility, Competitive advantages, Entrepreneurial Skills, Management capacity, and the regulatory environment. Structural model assessment explores the proposed relationships between exogenous and endogenous constructs, intending to explain the direct and indirect influences of the constructs on SMEs' growth paths.

The correspondence between empirical evidence and theoretical data establishes a framework that integrates observed relationships within the SME environment, enabling a comprehensive analysis to identify potential factors influencing the growth potential of small businesses

unrealistic variables.

3.5 Measurement and Model Assessment

The study employed Confirmatory Composite analysis (CAA) to accurately discover the efficacy of the proposed indicators to capture the basic concept and generate consistent measures. This ensures the validity and reliability of the model hence creating a solid foundation for successive analysis of variables. Therefore, it significantly supports deep analysis of the relationship between constructs resulting in the credibility of the research and authenticating the correctness of the measurement tools used to analyze various concepts.

in Tanzania.

3.5.2 Structural Model Collinearity

Multicollinearity occurs when predictor variables exhibit high correlation, which leads to unrealistic parametric estimates and increased standard error (Hair Jr et al., 2020c). Therefore, the multicollinearity test in the study ensures the accuracy and validity of the observed construct, reducing potential variations in the exogenous construct by lowering the Variance Inflation Factors (VIF) (Hair Jr et al., 2012). It is strongly recommended that the VIF remain within the estimated range of 0.2 to 5, as shown in Table 9. The exogenous constructs in the inner and outer models meet the standards set by the VIF. This analytical approach indicates valid and robust relationships between exogenous and endogenous constructs, which yield an appropriate presentation and interpretation of the study findings.

Table 9. Collinearity Statistics (VIF) Outer Model and Inner Model

Collinearity Statistics Outer Model	VIF	Collinearity Statistics Outer Model	Statistics	VIF	Collinearity Statistics Inner Model	VIF
AF1	1.596	RE2		1.855	AF->SG	2.825
AF2	2.056	RE3		1.721	ESMC->SG	2.330
AF3	1.638	RE5		1.534	MAC->SG	2.220
ESMC2	1.258	SG1		1.587	RE->SG	2.549
ESMC5	1.258	SG2		2.237		
MAC1	1.403	SG3		1.708		
MAC2	2.078	SG4		2.122		
MAC4	1.929	SG5		2.731		

Size and Significance of Path Coefficients

The bootstrapping with 5000 resamples and the bias-corrected accelerated (BCa) method was utilized to assess the size and significance of path coefficients within the structural model. These path coefficients denote the standardized values (coefficients) ranging from -1 to +1 for each affiliation in the structural and measurement models (Hair Jr et al., 2020d). The results presented in Table 10 revealed significant path coefficients for most hypothesized relationships. Specifically, the P-values from Access to Finance (AF), Entrepreneurial Skills and Management Capacity (ESMC), Market Access and Competition (MAC), and Regulatory Environment (RE) to SMEs Growth (SG) were found to be 0.000, 0.687, 0.241, and 0.011, respectively.

However, certain relationships did not reach statistical significance. For instance, the path from ESMC to SG was not statistically significant with a p-value of 0.687, and the confidence interval ranged from -0.137 to 0.224, demonstrating uncertainty in the estimated effect. Likewise, the path from MAC to SG was not statistically significant with a p-value of 0.241, and the confidence interval ranged from -0.087 to 0.350, signifying some variability in the relationship.

Table 10. Path Coefficients, p-values, and Confidence Intervals

	Original Sample (O)	Sample Mean	Standard Deviation	T-Statistics	P-Values	2.5%	97.5%
AF->SG	0.406	0.411	0.093	4.358	0.00	0.226	0.595
ESMC->SG	0.037	0.041	0.091	0.403	0.687	-0.137	0.224
MAC->SG	0.131	0.127	0.112	1.173	0.241	-0.087	0.350
RE->SG	0.320	0.321	0.126	2.536	0.011	0.069	0.564

Coefficient of Determination (R²)

In the structural model assessment of this study, the R-squared (R²) values obtained provide insight into the model's explanatory power regarding the endogenous variable, SME growth (SG). The R² value for SG was 0.619, indicating that the model accounts for 61.9% of the variance in SME growth. The minimum possible value of R² is 0, meaning that the exogenous construct explains none of the variance in the endogenous construct. Nevertheless, the maximum value of R² is 1, which implies that all of the variance in the endogenous construct is described by the exogenous construct (Hair Jr et al., 2020e). The number of model predictors was 0.607. The

remaining 38.1% could be attributed to other influences not included in the model.

3.6 Ethical Considerations

The study considered ethical standards throughout the entire process to avoid biased results. Ethical issues to ensure the production of professional, quality work include maintaining respect and avoiding data fabrication, falsification, and conflicts of interest (Bennett & Matyas, 2017). Respondents were informed about the study, and their informed consent was obtained to voluntarily maintain trustworthiness in providing appropriate data while guaranteeing the confidentiality of the information shared (Mirza et al, 2023).

4. Results and Discussion

Table 11: R-Square Overview Results

	R-Square	R-Square Adjusted
SG	0.619	0.607

4.1 Effect of (f^2)

To indicate the extent of the outcome of exogenous variables of Small and Medium-sized Enterprise Growth in Tanzania, the exploration categorizes the f-Squire value into small, medium, and large magnitudes. Parameters

ranging from 0.02 to 0.14 f-squire value were regarded as minor effects, 0.15 to 0.34 f-squire value as a medium magnitude of impacts, and values from 0.35 onward are considered the variable with significant effects. A value of precisely 0.15 is regarded as the beginning of medium magnitude, while a value of exactly 0.35 denotes the beginning of significant effect (Cohen, 2013).

Table 12: f^2 Effect

Path	f -Square
AF->SG	0.153
ESMC->SG	0.002
MAC->SG	0.020
RE->SG	0.105

4.2 Access to Finance Determines SMEs' growth

Access to finance (AF) for SG yields an f-square value of 0.152, indicating a medium magnitude of effects. This suggests that accessibility to finance for SME operations can moderately contribute to SME growth. In the theory of firm growth, a business's ability to develop progressive traits depends on its access to finance, which is commonly utilized to sustain operations throughout its entire life cycle. Importantly, Resource-dependency theory indicates that a small business, established within a network of interactions with other enterprises such as financial institutions for credit provision, creates the opportunity to access financial resources used in daily operations. Hence, improvements can be made to enhance access to finance.

4.3 Entrepreneurial Skills and Management Capacity (ESMC) determines SMEs' growth

Entrepreneurial Skills and Management Capacity (ESMC) to SG scored an f-Square value of 0.002 magnitude impacts. This indicates that ESMC is not a strong determinant of the model. Despite being a weak determinant, its contribution can not be isolated, as supported by the knowledge-based theory of small business growth, which asserts that for a firm to grow continuously and effectively, considerable correct decisions should be made under the systematic analysis of the business environment. This creates a distinguishable business model that exhibits unique traits through creation and innovation, symbolizing a business that fosters an

attractive mental and psychological image of enterprise for customers and other business stakeholders. Therefore, quality entrepreneurial skills and management abilities help a small business cope with abrupt changes in the business ecosystem that could threaten its operations.

4.4 Market access and Competition (MAC) determine SMEs' growth

Market access and competition (MAC) to SG imply small effects that yielded an f-square value of 0.020, indicating significant impacts on SME growth. This aligns with the theory of dynamic capability of small business growth, which states that for a small business to grow, it must possess the ability to capture potential markets by overcoming rival firms through effective value creation, innovation, and the consistent implementation of strategic directions.

4.5 Regulatory Environment (RE) Determines SMEs' Growth

Regulatory Environment (RE) to SG shows the *f-square* value of 0.105 with the medium effects. This suggests that the regulatory atmosphere could moderately influence SME growth, in Tanzania. Therefore, the legislative system is responsible for enacting favorable laws that suit small businesses, nevertheless, under proper translation from the judicial system, the proper government enforcement could also facilitate the growth of small businesses. Furthermore, the implementation of a legal framework out of corruption, collusion, selfishness, nepotism, mentality, and conflicts of interest creates a

supportive environment for small business growth in Tanzania. However upgrading could also be done in the

BlindFolding and Predictive Relevance (Q^2)

The results in Table 13 offer a valuable understanding of the structural model's predictive relevance and strength in explaining variations in SME growth. The analysis was carried out for the endogenous variable presenting SME Growth (SG) in Tanzania (SG1, SG2, SG3, SG4, AND SG5, with Q-square values 0.234, 0.324, 0.396, 0.405, and 0.454, respectively).

Positive Q-square values indicate meaningful predictive relevance, suggesting that the model's exogenous variables significantly predict SME growth. The study used BlindFolding and Predictive Relevance (Q^2) to capture and integrate variables regarding SME growth in Tanzania. Therefore, Q-square values exceeding 0.25 and 0.50 imply

regulatory framework to support SME operations in Tanzania.

Medium and significant levels of predictive relevance, respectively (Hair Jr et al., 2020f). The results within the medium range represent a significant contract, but not extraordinary predictive efficiency.

A high Q-squared observed in the model indicates strong predictive relevance, designating a significant portion of effects on SME growth. This reflects the model's ability to accurately project the growth potential of SMEs based on its constructs. A meaningful interpretation is crucial to ensure the model effectively captures and integrates relevant variables affecting SME growth in Tanzania. The study utilized BlindFolding and Predictive Relevance (Q^2) to enhance the model's ability to identify potential determinants that responsible business stakeholders should address for fostering and managing systems conducive to SME growth.

Table 13: Blindfolding and Predictive Relevance Q^2

	Q^2	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
SG1	0.234	0.751	0.589	0.784	0.602
SG2	0.324	1.230	0.904	1.334	0.964
SG3	0.396	1.291	0.981	1.374	1.018
SG4	0.405	1.134	0.837	1.195	0.869
SG5	0.454	1.152	0.829	1.232	0.920

4.6 Structural Equation Modeling

As shown in Figure 2, all indicators exhibit λ values greater than 0.700 for their respective constructs. This signifies a strong relationship in the measurement model between the observed variables and the latent constructs in the structural equation model (SEM), implying that the model is accurate. Regarding the relationship between constructs and SME growth (SG), Market Access and Competition (MAC) demonstrates a Beta coefficient of 0.131 toward SG. This indicates a positive yet relatively modest influence of MAC on SG. In contrast, Access to Finance (AF) exhibits a more substantial impact on SG, with a Beta value of 0.406. This suggests that AF plays a significant role in driving SME growth in Tanzania. Similarly, the Beta coefficient of 0.320 indicates that the Regulatory Environment (RE) has a notable influence on SG, suggesting that the regulatory framework in which SME operations occur substantially affects the growth prospects of SMEs.

Entrepreneurial Skills and Management Capacity (ESMC) exhibit a moderately lower beta value of 0.037 towards SG. While this indicates a positive relationship, the influence of ESMC on SG appears relatively minor compared to other determinants. The R-squared value of 0.619 for SG indicates that the model accounts for 61.9% of the variance in SME growth. Therefore, the identified determinants are recommended to explain a significant portion of the variations observed in SMEs' growth trajectories in Tanzania. However, it also suggests that other unexplained factors may contribute to SME growth, highlighting the need for further study and investigation in SMEs.

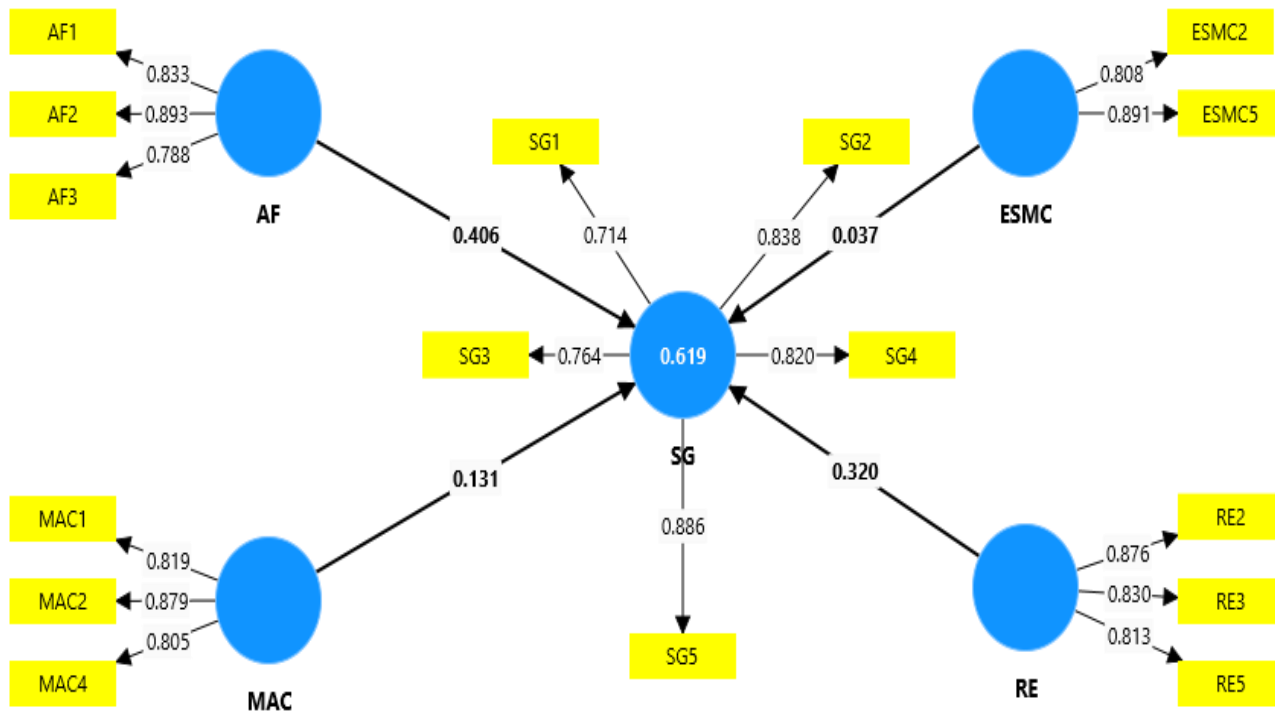


Figure 2: Representation of the Results of the Structural Equation Model

5. Conclusion and Recommendations

5.1 Conclusion

The comprehensive analysis and results of this study illustrate that a wide range of constructs significantly influence the performance of SMEs in Tanzania. We identified four significant constraints on the growth of SMEs, categorized as Access to Finance (AF), Access to Market and Competition (MAC), Regulatory Environment (RE), and Entrepreneurial Skills and Management Capacity (ESMC). While MAC has a low yet significant positive effect on SME growth, AF has a relatively high and significant positive effect, as does the Regulatory Environment (RE). These findings demonstrate that various factors interact in a complex manner to influence the growth and development of SMEs in Tanzania. There is an urgent need for policymakers and stakeholders to enhance the availability of finance and alleviate regulatory barriers to foster a supportive environment for SMEs. Strengthening SME owners' and managers' entrepreneurial and managerial skills is essential for promoting their growth.

5.2 Recommendations

With all these findings from the study, the following recommendations are proposed to facilitate the growth and

sustainability of small and medium-sized enterprises (SMEs) in Tanzania:

1. Enhance Access to Finance: To ensure the adequate provision of financial services with clear terms and easy accessibility, the Bank of Tanzania (BOT), in collaboration with the Ministry of Finance, should revise the legal and policy framework for financial services, redefine sustainable interest rates and financing terms, and promote a legal foundation for improved access to non-traditional options. This can be achieved by requiring financial providers, such as microfinance institutions and commercial banks with small business microfinance programs, to offer loan products linked to financial literacy training for SME owners.
2. Streamline all Regulatory Processes: To promote friendly business operations for SMEs in Tanzania, the Ministry of Industry and Trade should design an integrated system that offers collective services for licensing, registration, tax estimation, business registration, and the provision of potential business information, as well as legal procedures to secure intellectual property rights and other government support programs. The integration should focus on consolidating digital services provided by the

Business Registration and Licensing Agency (BRELA), the Tanzania Revenue Authority, Municipal Councils, the National Environment Management Council (NEMC), and the Ministry of Health to reduce certification bureaucracy, paperwork, financial costs, and time costs in formalization and filing practices.

3. Capacity Building in Entrepreneurial Skills: Expand training programs and organize workshops focusing on entrepreneurial skills and management capacity for SME owners and managers. This may include mentorship initiatives, entrepreneurship education in primary and secondary schools, and improved access to business development services. The Ministry of Education, in collaboration with business development agencies such as the Small Industries Development Organization (SIDO), Tan Trade, colleges, universities, and the Tanzania Chamber of Commerce, Industries, and Agriculture (TCCIA), should launch a comprehensive campaign to provide entrepreneurship research and development services, training in innovation, product development, sustainability, business management, strategic planning, and growth strategies to ensure the effective growth of SMEs in Tanzania.
4. Enhance Market Access: Create an environment that improves market access for SMEs, encourages market linkages, enhances infrastructure, and facilitates trade networks. Additionally, provisions should be made for SMEs to leverage digital technologies for marketing and distribution. Consequently, this will significantly boost competitiveness in domestic and international markets. The Ministry of Industry and Trade should collaborate with the Tanzania Chamber of Commerce, Industry, and Agriculture (TCCIA) and the Ministry of Health to strategize penetration techniques for local and international markets by establishing standard quality production and providing market information according to local and international guidelines. Implementing these strategies may unlock the growth potential of SMEs, ultimately contributing to economic development, job creation, and poverty eradication. Research and stakeholder collaboration are necessary to continuously measure progress and adapt to changing market dynamics and policy environments. To reach grassroots businesses, the Prime Minister's Office, Regional Administration, Local Government, and research institutions such

as colleges and universities should also design a digital platform system to evaluate SMEs, ensuring alignment with market and business policies.

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