Investigating Financial Resilience and Survivability of SMEs in Africa: A Panel Study

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Abstract

Aim of the Study

The unprecedented economic crisis created by the COVID-19 pandemic has renewed the debate on SME resilience in dealing with such pandemics and other business shocks. SME resilience largely depends on the financial capability of the SME as well as the presence of various environmental factors serving as coping mechanisms. Thus, financial capability supports the ability of the SME to adapt to both internal and external shocks, which usually forms an integral part of an organisational resilience strategy for survivability.

Methodology

Through a deductive research approach, this study adopted a longitudinal research design using twelve (12) year secondary data on five (5) predictors of financial resilience, namely *public policy, specific tax policies, SME training, R&D, and accounting and assessment services* for 20 African countries. A two-stage hierarchical Multiple Linear Regression (MRL) was executed to test five hypotheses relating to SME financial resilience in Africa.

Contribution

Our evidence indicates that effective public and tax policies, R&D, and accounting and assessment services significantly promote the financial resilience of SMEs in Africa. However, SME tailored training is statistically insignificant in creating financially resilient SMEs. African governments are therefore expected to augment training and capability programmes towards the creation of sustainable SMEs because African SMEs are financially fragile due to the weak institutional and technological environments in which they operate. It is, therefore, recommended that African SMEs build their internal capacities, particularly in developing their

human resource capacities for effective decision-making, which is crucial during pandemics and business shocks.

Implications for Policy

Firstly, this study has developed an efficient and robust framework that can be adopted in sustaining the operations of SMEs in serious pandemic situations in Africa. Therefore, governments in Africa should ensure that their SMEs are supported with effective policies that aim at strengthening capability and skill development, making research findings available to SMEs, and implementing friendly taxation and regulatory policies coupled with the streamlining of accounting and assessment services.

Implications for Practice

Investing in SME survival has a tremendous benefit for African economies as well as for individuals and their families (Chavis et al., 2009). To this end, increased financial resilience promotes SMEs' survivability which eventually improves the productivity levels of SMEs and their survival (Xue & Klein, 2010). It is equally important to emphasise the immeasurable role of the market dynamics regarding demand and supply relationships in accessing the right information for competitive advantage development, as indicated in the strategic factor market theory (Barney, 1986).

Keywords: Adaptability, Covid-19, Capacity, Institutions, Resilience, Survivability

1. Introduction

The recent Covid 19 outbreak has put most Small and Medium Enterprises (SMEs) in a very difficult and challenging situation, particularly in their quest to remain resilient in an increasingly competitive and dynamic market (Thukral, 2021). Promoting SME financial resilience is more critical given that the Organisation for Economic Co-operation and Development (OECD) (2020) predicted that most SMEs across the globe could record a significant loss in revenues which could impact their financial resources when the pandemic is over. This uncomfortable position that most SMEs found themselves in has renewed the existing debate on SMEs' resilience and their ability to cope in the event of a natural disaster such as the recent Covid 19 pandemic which could threaten SME survivability and financial performance (Brown & Cowling, 2020; Carruthers, 2020). An SME's ability to develop strategies to adapt and respond to any known or unknown internal and external shocks could represent an integral part of an SME's resilience and survivability tool (Conz et al., 2017). SMEs' financial resilience is defined as the capability to cope and survive during unforeseen or unpredictable occurrences which have the potential to disrupt their income stream significantly and in the worse cases, wipe out their assets (Bolt, 2019). In the same vein, SME resilience has been defined as the ability to minimize internal risk, thereby, reducing their vulnerability by using an effective strategic capability to quickly bounce back from any loss (Caldera-Sanchez et al.2016).

Dwindling SMEs' financial resources could lead to disruption to their supply chains leading to several job losses across all sectors (Bartik et al., 2020; Cowling et al., 2020; Juergensen et al., 2020). Given that SMEs are the major sources of employment globally, it is therefore imperative that SMEs are encouraged to develop resilience strategies that promote survivability and growth across the sector. But because SMEs operate in a very dynamic market environment

with undeveloped business structures and strategies, SMEs must concentrate on capability development to acquire the required skill sets that mitigate any potential catastrophic events such as COVID-19 (Aidoo et al., 2021). While SMEs have strived to survive uncertainties in the past decade, COVID-19 has tested their resilience and their capability to cope and deal with the substantial threat to the global economy (Olana, 2020; Chudik et al., 2020). For many SMEs, technological innovation and adaptation and effective use of scarce resources could form significant determining factors for resilience (Habiyaremye, 2021). This implies that SMEs must deploy new ways of managing their scarce resources and dealing with their customer base through the use of new technologies and remain competitive.

In the African context, the impact of the pandemic on SMEs has been drastic. According to a World Bank report, the continent has seen the worst economic decline from 2.4% in 2019 to -5.1% in 2020 (World Bank, 2020a). Such decline has been unimaginable, thereby plunging the whole continent into a recession. It has also been observed that external trade has decreased significantly causing Africa to lose between US$37 billion and US$79 billion (World Bank, 2020b). SME financial resilience in dealing with a pandemic has been woefully inadequate, with limited and in some cases, no government support in developing their resilience capabilities (BFA Global, 2020).

But the truth is, African SMEs must acknowledge that unforeseen global events are unpreventable, and they must be ready with effective strategies and be willing to respond to future business disruptions with their financial and operational capability (Pal et al., 2014). One can argue that pandemic has been a wake-up call for SMEs to develop operational efficiency. But in hindsight, the pandemic has put SMEs on new paradigms to explore new opportunities for organisational renewal and innovation to develop a resilient capacity. Notably, asset and cost retrenchment could be deployed as strategies that could help improve performance during periods of difficult economic events (Morrow et al., 2004). Therefore, the purpose of this chapter is to quantitatively examine the predictors or drivers of financial resilience and their impact on financial resource availability in Africa.

2. Background

2.1 SME financial resilience and survivability in Africa

The concept of financing resilience and SMEs' survivability in Africa has gained attention from most researchers recently. Resilience is referred to the ability of an SME to survive, adapt and grow during turbulent times (Kuckertz et al., 2020). Therefore, financial resilience is considered as the capacity to resist any financial impact on SMEs either on income or assets (Bolt, 2019). Various factors can be used in building SME financial resilience to mitigate any financial shock (Carruthers, 2020; Brown & Cowling, 2021). These measures to deal with unexpected shocks include the reduction of employee payroll and cutting budgets. More so, the management of assets and liabilities plays a vital role in SMEs' financial resilience-building ability (La Rocca et al., 2019). Hence, the progress and speed by which the SMEs adapt and return to a stable position after encountering business shocks are paramount, considering that most SMEs in Africa perform constantly in unstable environments that will most likely lead them to early extinction (Bhamra et al., 2011).

SMEs in Africa have experienced several challenges over the years. Firstly, between 2008 and 2009, the rise of the global economic instability that was caused by the market crash, exposed many African SMEs to financial risks which resulted in the loss of jobs, increased reliance on indemnities from insurance payouts and final collapse of businesses (Lyons et al., 2020;

Chiloane-Phetla & Mathipa, 2021). Secondly, the Ebola virus outbreak in the Western and Central African countries in 2014, to the current Covid-19 pandemic resulted to further shocks and a negative impact on SMEs' financial resources (Stoop et al., 2021). Lastly, the unforeseen climatic shocks in the form of floods and drought impact SMEs in the agricultural sector and caused the need for financial resilience adoption. For example, in 2015, El Nino in the Southern and Eastern parts of Africa caused devastating widespread flooding (Gannon et al., 2018). This resulted in many SMEs engaging in the implementation of sustainable resilience practices such as access to information technology (Crick et al. 2018). Equally, other mechanisms such as microcredit or bank loans, insurance uptake and the combined pooling of resources with other farmers were used by some of the SMEs in the agricultural sector as a protection technique (Bolt, 2019). This implies that the shocks to SMEs initiate a valuable lesson on how to aid long-term financial resilience such as effective resource utilisation, business insurance, management systems and operational efficiency (Chakma et al., 2017). Using these innovative strategies led to an increase in SMEs' resilience, flexibility and ability to survive hardships (William et al., 2017). Nevertheless, the impact of Covid-19 strongly exceeds previous shocks as it resulted in a complete shutdown of businesses worldwide (Stoop et al., 2021).

This knowledge demonstrates the significant threat of Covid-19 on SMEs, especially those in developing countries as there is inadequate access to finances and borrowing capacity. While in developing nations, various measures such as emergency funds have been put in place to support SMEs against financial shocks, whereas in the African governments, not much effort was provided to assist SMEs (Muriithi, 2021). For instance, a recent study that included 1,561 SMEs from countries such as South Africa, Kenya and Nigeria, concluded that most SMEs' cash reserves could only last them for four to six months (BFA Global, 2020). This implies that these SMEs' survivability is compromised as they are highly unlikely to exceed six months. In addition, in a study that engaged 17 African business owners, 87% predicted that their businesses were unable to survive the Covid-19 shock (Harrison, 2020). According to ITC (2020), the total losses for African businesses were estimated to be US$2.4 billion from the industry supply chain because of the factory shutdown. Furthermore, there was a drop in the ability to access inputs that ranged between 75% and 54% which led to two out of every three SMEs in Africa experiencing a reduction in sales (ITC, 2020).

Notwithstanding the overall impact on SMEs, not all businesses experienced the same predicament during the pandemic as some had previously laid sustainable resilience strategies. For example, the Global Accelerator Learning Initiative (GALI) and Aspen Network of Development Entrepreneurs (ANDE) study on 488 entrepreneurs that included 39% from Sub-Saharan Africa, 25% from Latin America and the Caribbean and 8% from Asia concluded that there were increased revenues in their 2020 projection in sectors such as 12% in finance, 11% in education and 10% in health sectors (ANDE, 2020). This was a result of the introduction of digital technologies that acted as a survival measure (Gregurec et al., 2021). In addition, other mechanisms that have helped with SMEs' resilience include fostering access to and applying the use of financial services like loans, insurance, and investment products. However, other researchers suggest that acquiring financial literacy is positively associated with financial awareness, knowledge, skills and the attitude to effectively access financial services (Lyons et al., 2020; Habiyaremye, 2021).

3. SME resilience and the strategic factor market theory (SFMT) approach

SMEs have a key role in the development of emerging economies as they dominate in transforming local communities through job creation and innovation processes that have a

positive impact on economic growth (Dlamingo, 2017). Their cumulative impact is far from negligible because they act as the epitome of a country's economy and serve at the cradle of entrepreneurship and exploit niche markets due to their adaptability and innovation (Manyani, 2014). Hence, SMEs are noted for the creation of employment and increasing individual wealth which contributes to the reduction of poverty and improves standards of living for many households (Kalogiannidis, 2020; Abisuga-Oyekunle et al., 2020; World Bank, 2020a). As mentioned earlier, SMEs across the world has been confronted with unexpected financial shocks as a result of the Covid-19 pandemic. Therefore the resilience strategy used by SMEs during the pandemic is influenced by limited resources, business size and the level of crisis (Turkson et al., 2021). This means that the resilience of SMEs is not necessarily impacted by the business only but also by the type of external support that they are provided from the institutional level in a country.

The SFMT posits that SMEs can only generate rents from externally acquired resources if they have private information that allows them to develop greater expectations in value creation. The importance of private information when compared to public information is obtained through internal sources that lead to the generation of greater competitive advantage for SMEs (Kim, Hoskisson, & Lee, 2015; Leiblein, Chen, & Posen, 2017). This insinuates the importance of access to information during a pandemic as it impacts SMEs' decision-making processes. The lack of such information will likely lead to a negative impact on SMEs as they prolong normalcy due to inconsistencies in decision-making processes. Similarly, SMEs need to understand the strategies that are needed in response to pandemic shocks and the costs of resource investment to influence performance (Barney, 1986). More so, the cost and asset reduction would increase the availability of business resources and reduce organisational costs thereby resulting in organisational performance during a crisis (Aidoo et al., 2021).

Furthermore, fostering adaptive resilience which constitutes both tangible and intangible resources (knowledge, leadership, decision-making capabilities and ability to share critical information), creates a wider base for firms to adapt during shocks and improve on performance (Chowdhury et al., 2019). Thus, it is pertinent for SMEs to consider tangible and intangible resources at their disposal when dealing with challenging circumstances that affect business performance through effective decision-making. Although the various dynamic factors such as institutional context, economic development and access to cost-effective capital come into play (Ayyagari, 2014). Therefore, having effective public policy support, favourable tax policies, regulations and access to training programs in nurturing financial resilience for SMEs will reduce their vulnerability and promotes survivability against adversities.

4. Developing SME Resilience in Africa

4.1 Public Policy Support

The main focus of preventing SME failures and promoting the growth of the sector and rip potential economic benefits is to ensure that most governments have a robust and critical policy in place to sustain the short-term liquidity of SMEs (Le et al., 2020). This has led some countries to deploy more focused general policies to build a resilient SME sector in the event of any future economic downturn. In the United States, the government has introduced the Coronavirus Aid Relief and Economic Security (CARES) Act specifically to support SMEs with the resources needed to continue paying their staff and cover overhead costs (US Department of the Treasury, 2020).

Some African countries have adopted similar strategies. In Ghana, the Coronavirus Alleviation Programme (CAP) was introduced to support Ghanaian SMEs deal with their debts and acquiring critical resources to boost the sector (Aidoo et al., 2021). Similarly, South Africa has also introduced Debt Relief Fund to assist SMEs in paying debts and acquiring resources needed for their survivability (Dlothi & du Plessis, 2020). All these policies are designed to avoid the collapse of SMEs as the economy of every nation relies on this sector. Access to financial resources has been a major constraint for most SMEs even before the Covid-19 pandemic (Otman, 202; Rajagopaul et al., 2020). This implies that inaction on the part of the Government could only exacerbate the plight of most SMEs across the continent. Hence, the Central Bank in Kenya has also stepped in to support most SMEs by introducing monetary conditions that enable commercial banks to provide affordable credit to SMEs (Zeidy, 2020).

In some developed countries where there is enough support for SMEs, governments have stepped out from the traditional route of bank lending to provide equity financing through the various stock exchanges to support SMEs' recovery from the pandemic (Tawakol & Ibrahim, 2020). Similar strategies have been adopted in Ghana (Ghana Alternative Market, GAX), Egypt (Nilex) and South Africa (AltX) (Tawakol & Ibrahim, 2020). Invariably, the lack of this kind of support hurts entrepreneurship development in any country (Hoque & Awang, 2019). Therefore, the role of public policy support is paramount during pandemics as well as through the post-pandemic stages. In this direction, the government's policies on taxes, interest rates, and social security play a vital role in the survival and resilience of SMEs in a pandemic.

4.2 Supportive tax policy and regulation

The conditions created by governments around taxation, licensing and infrastructure could play a role in either the success or failure of SMEs (Muriithi, 2017). Most public policies and regulatory frameworks act as instruments that create a conducive environment to equip SMEs in dealing with financial barriers and information asymmetry (Doh & Kim, 2014). This highlight the significant role the regulatory framework can play in promoting SME growth. SMEs are the bedrock of every economy and this implies a successful SME sector leads to a flourishing national economy (Aidoo et al., 2021). Explicitly, the unfavourable tax systems, complex rules, and overregulation could negatively obstruct SME growth. For example, income tax paid by businesses in Kenya is 51%, Ghana, 33%, Nigeria, 30% and in South Africa, it ranges from 7% to 28% depending on the size of the business (Muriithi, 2017).

A specific example can be found in Botswana where the government demonstrated the commitment to boost SMEs ' resilience by introducing a tax deferral of 75% of any quarterly payments between March 2020 and Sept 2020 for SMEs (Price, 2020). Similarly, unionised SMEs, in collaboration with African governments, reduced taxes and postponed the submission of financial returns as a mechanism to cut costs (Ufuo et al., 2020; Thabani & Richard, 2020). Therefore, it is important for policymakers to properly analyse tax policies to have a functional and equitable tax system.

4.3 Tailored SME training programs

Inadequate management skills, the lack of critical functional skills and financial literacy are noted to be major causes of SME failures in the African continent (Muriithi, 2017). Therefore, literacy proficiency and the continuous need for training and development programmes for SMEs becomes crucial, particularly in circumstances that require adaptability during volatile times. A study of 124 SMEs in Uganda revealed that 60% of the firms had spent less than the

US $200 per annum on training in the area of digitisation for survivability which is woefully inadequate (Otete, 2021; Bai et al., 2021).

The lack of adequate skills has renewed the debate for universities in Africa to do more in mitigating and contributing to solving a myriad of challenges encountered by SMEs to develop and deliver training and mentorship programmes that could improve their capability and make SMEs more resilient (Svenson, 2021). For example, Zimbabwe introduced an improved curriculum on vocational education and training centres which focus on problem-solving, value creation, innovation, and responding to the changing labour market aims to specifically develop the entrepreneurial capacities and dexterity of SMEs (Manyati & Mutsau, 2020). Equally, the Ghana Innovation Hub, i-Code Ghana and Kumasi Hive, under the European Union-funded "Boosting Green Employment and Enterprises opportunities in Ghana", are running online incubation services in assisting entrepreneurs in developing resilience and survival skills (Thukral, 2021). Undoubtedly, such programmes provide social networking, improve innovation capabilities, and motivate SMEs to deliver on their economic and social mandate. Although the lockdown measures presented an unprecedented challenge for skills development for many SMEs to take place during the pandemic, it is expected that these strategies should be continuously implemented in preparedness to cope with pandemics and other business shocks (Manyati & Mutsau, 2021). It is, therefore, important to investigate the impact of these training programmes offered to SMEs in developing financial resilience.

4.4 National Research and Development

There is a huge knowledge gap in most African firms due to a paucity of research on resilience and how firms can cope in the event of any unforeseen circumstances. Until African governments and organisations take pragmatic steps to invest in research to support business growth capability development, most SMEs will continue to lack the stability needed to remain productive in the face of pandemics. The conditions and the environment in which some African firms operate are quite unfortunate, particularly in the area of infrastructural gaps and institutional voids. Research into these conditions can help identify some of the challenges and how organisational decision-making can be crafted to support business growth under these extreme conditions (Barnard et al., 2017). However, the difficulties associated with data collection in the African context could be daunting to researchers, thus creating a data gap in African businesses (Kolk & Rivera-Santos, 2018). Again, regular research into these conditions will invigorate innovation and the competitive edge held by strong capacities in efficiency, speed, and quality that help businesses to adapt to challenging circumstances (Hahn et al., 2006).

4.5 Accounting and assessment services

The operation and financial challenges found by SMEs can be addressed by increasing focus on the accessibility to accounting and assessment services. According to Lee, Choi & Yoo (2020), SMEs with no accounting and auditing support are likely to be financially fragile. However, these services that lead to access to finances are scarce, creating a major barrier for SMEs in Africa (Quartey et al., 2017). This implies that without the existence of external finance, SMEs might find it hard to compete in an international market that promotes growth and expand their businesses (Osano & Languitone, 2016). More so, lenders consider secured titles as a prominent step that influences their decision when accepting any business loan application that has given landed property as collateral (Domeher et al., 2016). Most SMEs in Africa, lack property rights that exacerbate their financial circumstances, as a result, loan

applications are rejected which creates a disparity between the demand a supply of credit (Domeher, Frimpong & Mireku, 2014). This means that the inability to access formal sector finance is fundamentally a supply-side problem for SMEs (Daniels et al., 2017). In addition, tackling financial resilience would also require the ability of SMEs to have access to legal services and other supportive institutions to enforce contracts. With the above discussion, we have developed a conceptual framework with five (5) hypotheses for the development of financial resilience, as shown in Figure 1 below.

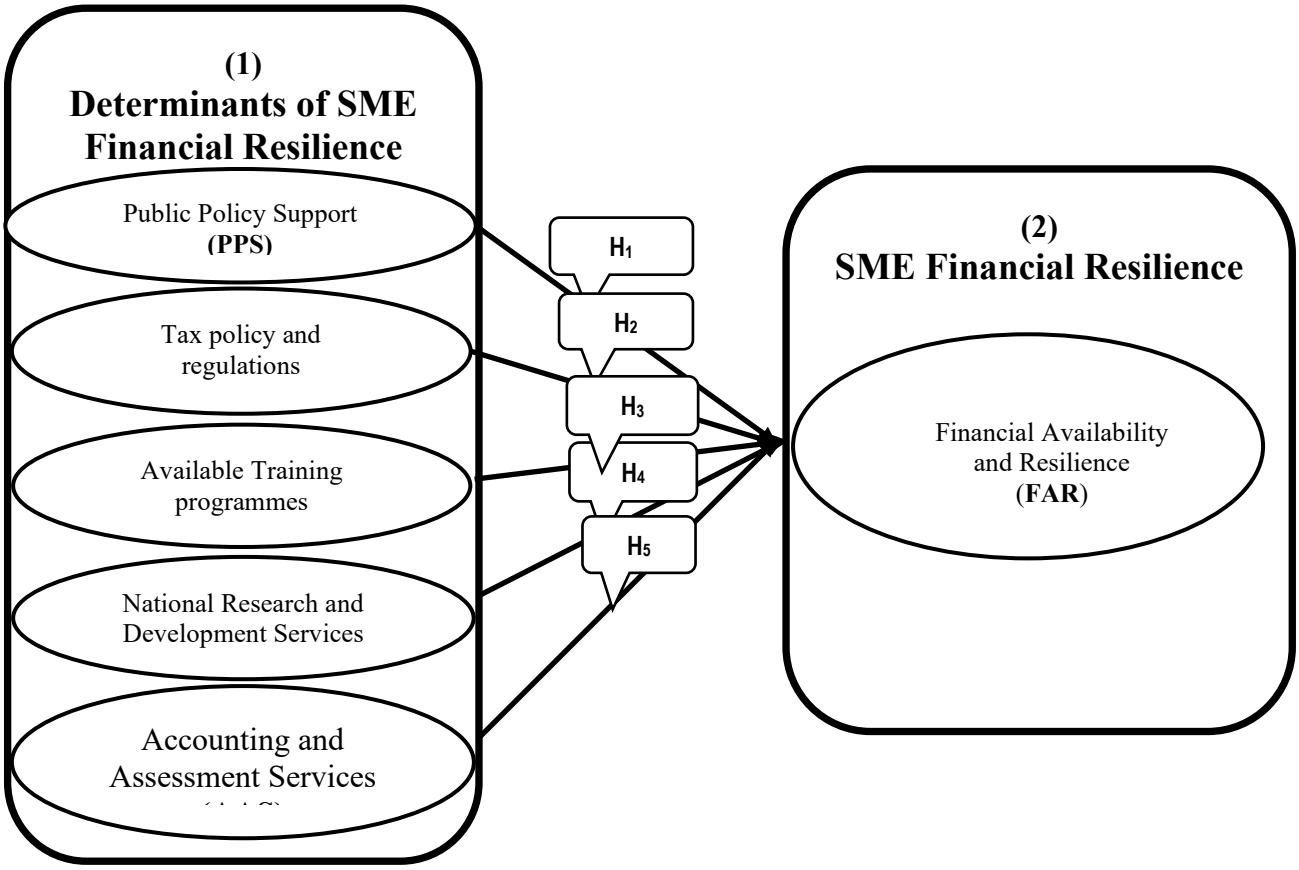

Figure 1: A hypothesised model of SME financial resilience

H1*: *Effective public policy support has a positive relationship with SME resilience and survivability
H2*: *Effective tax policy and regulations have a positive relationship with SME resilience and survivability
H3*: *Effective SME training programmes have a positive relationship with SME resilience and survivability
H4*: *Availability of national research and development programmes has a positive relationship with SME resilience and survivability
H5*: *Effective accounting and assessment services have a positive relationship with SME resilience and survivability

5. Methodology

A longitudinal research design was used for this study with panel data spanning 12 years (2009 to 2020) on twenty (20) countries in Africa which were conveniently selected based on data availability. The countries include *Madagascar, South Africa, Namibia, Mozambique, Malawi, Botswana, Zambia, Uganda, Ethiopia, Sudan, Cameroon, Nigeria, Ghana, Burkina Faso, Senegal, Libya, Morocco, Tunisia, Algeria and Egypt* to investigate the financial resilience of SMEs in Africa. Distilling variables relating to financial resilience predictors from the panel data, the multiple linear regression (MLR) technique was applied using SPSS-version 27. Panel data has been successfully used in numerous studies. For instance, Sakyi-Nyarko, et al. (2022), Sun et al. (2022), Kass-Hanna, et al. (2021) and Hussain et al. (2019) among others, have all used panel data to establish relationships among variables on financial resilience. Data on the countries mentioned above were collected from the Global Entrepreneurship Monitor (GEM). The GEM employs two complementary tools in its data collection. These include the National Expert Survey (NES) and the Adult Population Survey (APS). The latter is designed to cover the life cycle of the entrepreneurial process through which it explores not only the business characteristics but also the motivational factors that drive individuals to start a business. Under the APS handle, the survey covers, in each economy, at least two thousand (2000) adults and this guarantees national representativeness.

On the other hand, the NES tool focuses on some nine (9) variables that have been assumed to be significantly impacting entrepreneurship. These include *Government Policy, Entry Regulation, Physical Infrastructure, Commercial and Legal Infrastructure, Entrepreneurial Finance, Government Entrepreneurship Programs, Entrepreneurship Education, R&D Transfer, and Cultural and Social Norms*. The GEM uses the convenient sampling technique to select the national and regional experts for the study where at least thirty-six (36) experts in each country are covered in the survey. These participants express their opinions on the nine factors listed above on a Likert scale which is rated from completely true to completely false. With this level of methodological standardisation, the data quality is assured and this makes it possible to both aggregate and/or compare across multiple countries and regions. The quality of the GEM's data is further guaranteed through the coordination of its data experts with national survey vendors and teams who subject the surveys to a range of quality control scrutinies before actual data collection and publication.

Table 1: Variable Definition and Model Specification

Variable	Variable Specification	Description	Measurement Scale
Financial Availability and Resilience (FAR)	Dependent Variable	The availability of financial resources-" equity and debt" for small and medium enterprises (SMEs) (including grants and subsidies)	Likert scale: completely false to completely true
Public Policy Support(PPS)	Independent Variable	The extent to which public policies support entrepreneurship development	Likert scale: completely false to completely true
Tax Policy and Regulations (TPR)	Independent Variable	The extent to which tax policies and regulations encourage SME growth or encourage new SMEs.	Likert scale: completely false to completely true
Available Training Programmes (ATP)	Independent Variable	The extent to which training in creating or managing SMEs is incorporated within the education and training system in higher	Likert scale: completely false to completely true

		education such as vocational, college, and business schools	
National Research and Development (NRD)	Independent Variable	The extent to which national research and development will lead to new commercial opportunities and is available to SMEs	Likert scale: completely false to completely true
Accounting and Assessment Services (AAS)	Independent Variable	The presence of property rights, commercial, accounting and other legal and assessment services and institutions that support or promote SMEs	Likert scale: completely false to completely true

6. Results and discussion

6.1 Descriptive Statistics

Table 2 below presents the mean, standard deviations, minimum and maximum values, skewness, and kurtosis of both the dependent and independent variables constitute the components of descriptive statistics adopted. A critical analysis of the values of the mean of the dependent variable (FAR, 2.37987) and all the independent variables (PPS, 2.58329, TPR, 2.32250; ATP, 1.83092; NRD, 2.63763; AAS, 2.00408) collectively suggest an ideal central tendency given the minimum and maximum values. Similarly, the values of the mean of all the independent variables indicate their contribution to influencing the dependent variable. NRD, For example, produced the highest mean (*2.63763*), as opposed to ATP (*1.83092*) producing the lowest mean. Having observed the skewness for the entire values, the study suggests that the data is normally distributed, thus they are neither skewed positively nor negatively. (see the histogram in the appendix showing data normality). The kurtosis result from the data revealed the highest kurtosis as PPS (4.011), while ATP (-.589) produced the lowest kurtosis which all fall within the normal boundaries implying that non-existence of outliers (non-normality) in the distribution (Hair et al., 2017; Sarstedt et al., 2017).

Table 2: Descriptive Statistics

Descriptive Statistics													
	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Financial Availability and Resilience	76	2.160	1.260	3.420	180.870	2.37987	.043072	.375494	.141	.228	.276	1.010	.545
Public Policy Support	76	3.290	1.260	4.550	196.330	2.58329	.057606	.502196	.252	1.140	.276	4.011	.545
Tax Policy and Regulations	76	1.820	1.600	3.420	176.510	2.32250	.046664	.406809	.165	.808	.276	.442	.545
Available Training Programmes	76	1.630	1.140	2.770	139.150	1.83092	.046686	.406996	.166	.092	.276	-.589	.545
National Research and Development	76	1.960	1.500	3.460	200.460	2.63763	.048676	.424345	.180	-.272	.276	-.523	.545
Accounting and Assessment Services	76	1.710	1.170	2.880	152.310	2.00408	.035543	.309857	.096	.617	.276	.980	.545
Valid N (listwise)	76												

7. Correlation Analysis

The study conducted correlation analysis to establish the connection between the entire variables deployed in the study, as depicted in Table 3 below. The result of the correlation analysis shows the linear relationship existing among the variables with a higher degree of accuracy which is non-trivial (Dormann, Elith & Bacher, 2013). The result shows that the Variance Inflation Factors (VIF) values are below 4, which implies that multicollinearity has not been observed as a challenge in this study (Jensen & Ramirez, 2013; Dupuis & Victoria-Feser, 2013) as shown in Table 5. Similarly, the collinearity diagnostics from Table 4 show that multicollinearity is not a challenge in this study. More so, a careful analysis of the predictor variables (PPS, TPR, ATP, NRD and AAS) established the fact that they do not correlate highly with the dependent variable (FAR)

The results as depicted in Table 3 reveal that the dependent variable positively correlates with all the independent variables. FAR, For instance, positively correlates with PPS (r = 0.000). Also, FAR positively correlates with TPR (r = 0.093, ATP (r=0.008), NRD (r = 0.054), and AAS (r = 0.000) respectively. As regards the interconnection among the independent variables, the findings revealed that they correlate positively with each other. Highlighting the interconnection, TPR correlates positively with public policy support (r = 0.000), and ATP as well as a positive correlation with PPS (r =.012). Further, NRD positively correlates with a correlation coefficient of (r = 0.001) with TPR.

Table 3: Pearson Correlation Matrix

		Financial Availability and Resilience	Public Policy Support	Tax Policy and Regulations	Available Training Programmes	National Research and Development	Accounting and Assessment Services
Sig. (2-tailed)	Financial Availability and Resilience	1.					
	Public Policy Support	.000***	1.				
	Tax Policy and Regulations	.093*	.000***	1.			
	Available Training Programmes	.008***	.012**	.466	1.		
	National Research and Development	.054**	.000***	.001***	.000***	1.	
	Accounting and Assessment Services	.000***	.000***	.003***	.000***	.000***	1.

***P*<0.1; ****P*<0.05; *****P*<0.01**

Table 4: Collinearity Diagnostics

Collinearity Diagnostics Variance Proportions									
Model	Dimension	Eigenvalue	Condition Index	(Constant)	PPS	TPR	ATP	NRD	ASS
1	1	7.866	1.000	.00	.00	.00	.00	.00	.00
	2	.050	12.587	.00	.04	.05	.15	.00	.00
	3	.043	13.556	.02	.00	.00	.12	.02	.01
	4	.015	23.094	.03	.28	.15	.00	.12	.09
	5	.010	27.405	.04	.05	.08	.55	.14	.32
	6	.006	35.464	.22	.24	.01	.14	.65	.11
	7	.005	38.017	.62	.39	.01	.00	.00	.12
	8	.004	43.344	.07	.00	.70	.03	.06	.36

The multiple linear regression deployed to test the five (5) hypotheses is illustrated in Table 4 above. Invariably, five (5) regressions were conducted as depicted in the above conceptual model. The findings from the regression indicate that the value of the R^2 from the model for FAR is (0.702) compared to that of the adjusted R^2 of 0.672. This regression model result means that the model is capable of explaining the variances in FAR by 67.2%. Similarly, the F-value which assesses the ability of independent variables to explain significantly the dependent variable is 22.917, and significant at a 1% level (p=0.000). This result implies that the model is strong enough to predict FAR at a 99% level of confidence.

Table 5: Regression analysis of resilience factors

Coefficients													
		Unstandardised Coefficients		Standardised Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.201	.282		4.253	.000	.637	1.764					
	Public Policy Support	.370	.087	.494	4.250	.000	.196	.543	.632	.458	.281	.324	3.091
	Tax Policy and Regulations	.312	.107	.338	2.925	.005	.524	.099	.153	.334	.194	.329	3.043
	Available Training Programmes	.035	.088	.038	.399	.691	-.141	.212	.277	.048	.026	.477	2.097
	National Research and Development	.341	.093	.385	3.652	.001	.527	.155	.186	.405	.242	.394	2.538
	Accounting and Assessment Services	.749	.129	.618	5.783	.000	.490	1.007	.698	.574	.383	.383	2.608
	R^2			0.702									
	Adj. R^2			0.672									
	ANOVA			22.917									
	Sig F			0.000									
	N			76									
a. Dependent Variable: Financial Availability and Resilience													

***P<0.1; **P<0.05; ***P<0.01**

As depicted in Table 5 below, the regression results revealed that PPS ($\beta = 0.494$, $p = 0.000$), TPR ($\beta = 0.338$, $p = 0.005$), ATP ($\beta = 0.038$, $p = 0.691$), NRD ($\beta = 0.385$, $p = 0.001$), and AAS ($\beta = 0.618$, $p = 0.000$). The result implies that whilst PPS, TPR, NRD and AAS are significant at a confidence level of 99% at predicting FAR 1%, ATP on the other hand is insignificant at predicting financial FAR.

8. Discussion

First, in connection with the interrelationship between public policy support and financial availability and resilience, the findings indicate that public policy support positively correlates with financial availability and resilience and is significant at a 1% level statistically in predicting financial availability and resilience. Therefore, a unit increase in public policy support can increase financial availability and resilience by 49.4. This result is consistent with many studies that contend that effective public policy supports the growth and development of SMEs in a country, ultimately leading to improved general resilience of SMEs (Aidoo et al., 2021). Robust public policy support combined with structural, monetary, and infrastructural support promotes the enabling environment for SMEs to operate by exploiting their internal and external resources in enhancing their capabilities is critical to adjusting to pandemic and business shocks. Governments in Africa, therefore, are required to concurrently enhance their policy milieu so that policies inimical to SME growth are contained. Nonetheless, it is unsurprising that governmental and public policies in Africa do not promote SMEs adequately. These governmental programmes toward SMEs are largely shoddily designed and thus unable to achieve their intended objectives (Lerner, 2009; Hoque and Awang, 2019). The study's hypothesis as regards the significant positive impact of public policy support on financial resilience is therefore accepted.

Second, as regards the impact of supportive tax policy and regulations on SME resilience, the findings reveal that TPR correlates positively with SME resilience and is significant at 1% statistically in predicting the financial resilience of SMEs in Africa. Thus, a unit increase in tax-effective policies can increase financial resilience of SMEs by 33.8% ($\beta = 0.338$, $p = 0.005$). The result particularly is unsurprising because extant evidence averred that a supportive tax policy and regulations culminate in enhanced financial resource availability for SMEs, which is a critical asset during pandemics and business shocks (Muriithi, 2017; Habiyaremye, 2021). However, SMEs in Africa operate in unstable and fragile environments which more often than not adversely impact their survival and capability development. Thus, environments endowed with robust task policies like tax rebates, tax protection, and supportive regulations, promote the required organisational resilience and abilities during

catastrophic events such as COVID-19 (Doh & Kim, 2014; Aidoo et al., 2021). Similarly, initiatives such as information technology, tax compliance costs as well as a tax system that is revenue-dependent as opposed to compulsory payments as observed in Africa do not promote resilience during pandemics(Chakma et al., 2017; Crick et al., 2018). The advantages of such programmes are the adoption of innovation in business and efficient adaptability skills, which are major ingredients in nurturing organisational resilience (Habiyaremye, 2021). Our hypothesis as regards the positive impact of a supportive tax policy on financial resilience is therefore accepted.

Third, the findings of the study indicate that although there is a positive correlation between available training programmes and financial availability and resilience in Africa, it is not statistically significant. Therefore, our hypothesis in connection with the impact of training

programmes on financial resilience in Africa is not supported. This observation is not surprising, particularly in developing and poor countries where quality training programmes for creating SME capabilities are relatively scarce (Thukral, 2021). Generally, the literacy level of SME owners in Africa is low; thus efficient decision-making during pandemics and business shocks is largely impaired. Nonetheless, as posited by Thukral (2021), regular and unique entrepreneurial training initiatives for SMEs promotes resilience and survival in pandemic situations. Although many African governments deployed some training initiatives for SMEs during the pandemic, these initiatives are observed to be late in developing the prerequisite financial resilience as capability enhancement of SMEs is a process rather than anecdotal and reactive training programmes with no value (Pal et al., 2014; Manyati & Mutsau, 2021). The European Union, particularly, introduced a couple of training programmes including the online incubation services in digitalisation, but couldn't have made any significant impact as such programmes seemed rather reactive to the pandemic as opposed to SME preparedness for such situations (Svenson, 2021).

Further, national research and development impact financial availability and resilience positively with a correlation that is significant at 1% at predicting financial availability and resilience ($\beta = 0.385$, $p = 0.001$). Thus, a unit increase in national research and development can increase financial availability and resilience by 38.5%. Therefore, the hypothesis in connection with the positive impact of national research and the development of financial resilience is thus supported. Although governments in Africa are deficient in research capability on SMEs, many programmes by international organisations including the European Union, the World Bank and the United Nations have increasingly attempted severally to the special prerequisites of SMEs in Africa. This initiative incredibly impacted positively on African SMEs. Nevertheless, it is crucial for local research institutions and universities to initiate research-intensive programmes to prop up the development of SMEs as they operate in an unstable and unstructured environment. This programme must be recurrent to provide a robust antidote for SMEs' survival and resilience. Relatedly, the programme can impact new firm development and employment generation ability development of African SMEs.

Finally, in connection with the correlation between accounting and assessment services and financial availability and resilience of SMEs in Africa, the findings reveal that accounting and assessment services positively correlate with financial availability and resilience and are statistically significant at 1%. A unit increase in accounting and assessment services would improve financial availability and resilience by 61.8% ($\beta = 0.618$, $p = 0.000$). This result implies that an increase in accounting and assessment services culminates in increased financial availability and resilience of SMEs. Intentional exposure of SMEs to administration and accounting products could lead to cost savings, efficient credit administration, and insurance uptakes have the propensity to improve resilient in pandemics as opposed to those without these services (Chiloane-Phetla & Mathipa, 2021; Lyons et al., 2020). Timely deployment of assessment products including tax assessments reliefs, project planning, cost management assessments, resource usage and legal services could reduce the moral hazard associated with SMEs in Africa and increase the returns on their investments. These support programmes can equally promote property rights and provide a cushion against business failure (Chavis et al., 2009; Xue & Klein, 2010; Klapper & Love, 2011).

9. Conclusion and implications

The conceptual model deployed in this study is to address the research gap in the search for a validated model for SME survivability in Africa. This model affirms the positions of earlier

studies that public policy support, supportive tax policy and regulations, availability of training programmes, national research and development, and accounting and assessment services continue to be key elements that have the potential to influence the financial resilience of SMEs to invoke the intended SME survival objective which propels the socio-economic growth and development of African economies (Lyons et al., 2020).

To the best of my knowledge of this study, it is the initial time in Africa's SME space that panel data of this kind was deployed to proffer a better comprehension of the financial resilience of Africa's SMEs. This study has thus resolved this drawback by advancing to the financial resilience literature through the development of a potent theoretical model that strongly argues that an improvement in financial resilience of SMEs is contingent on a unique public policy, a friendly tax regime, SME-tailored training programmes, research and development, accounting, and assessment services.

Therefore, the pursuit of SME survivability triggers enormous advantages for African economies (Chavis et al., 2009). Thus, improved financial resilience enhances SMEs' survivability which potentially increases the efficiency levels of SMEs and their survival (Xue & Klein, 2010). The tremendous role of the resources possessed by SMEs in market dynamics relating to demand and supply conditions in accessing the right information for competitive advantage development must be emphasised, as suggested in the strategic factor market theory (Barney, 1986). Drawing from the above conclusions, reliable and broader institutional support is key for SME survival and resilience.

The implications of the Study

First, this study has built a robust framework that can be deployed in enhancing the operations of SMEs in terrible pandemic situations in Africa. Thus, governments in Africa ought to make sure that their SMEs are assisted with robust programmes with the sole objective of reinforcing the competencies and skill development, thus communicating research findings to SMEs in simple diction, and enforcing friendlier taxation and regulatory programmes as well as streamlining accounting and assessment services.

The limitations of the Study

The significant drawback of the study is the non-availability of data points for some of the years in the 12 years for some of the countries coupled with the fact that the data covers just 20 countries in Africa. Nonetheless, the study outcome's validity and reliability are not significantly affected by these limitations.

Direction for future research

This study advances additional discernment into research on SME resilience and survivability. Further research could thus be directed at investigating the kind of and influence of existing training programmes only to spot the varied ways of enhancing SME competencies for effective decision-making. Further, SMEs are developed in different sectors of the African economy including retail, manufacturing, agriculture and services. As every SME has its resilience strategy dependent on the sector in which it is located, future research can thus be directed at specific sectors rather than lumping the entire SMEs into a single compartment for analysis. The object is to contrast the resilience and survivability capacities of SMEs within specific sectors of the African economy.

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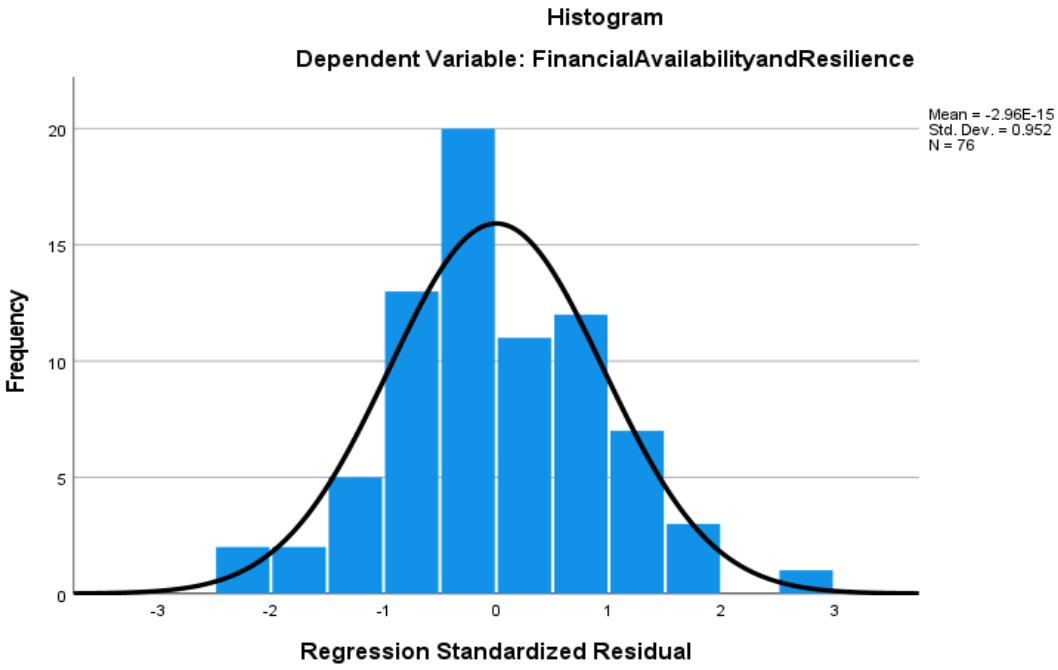
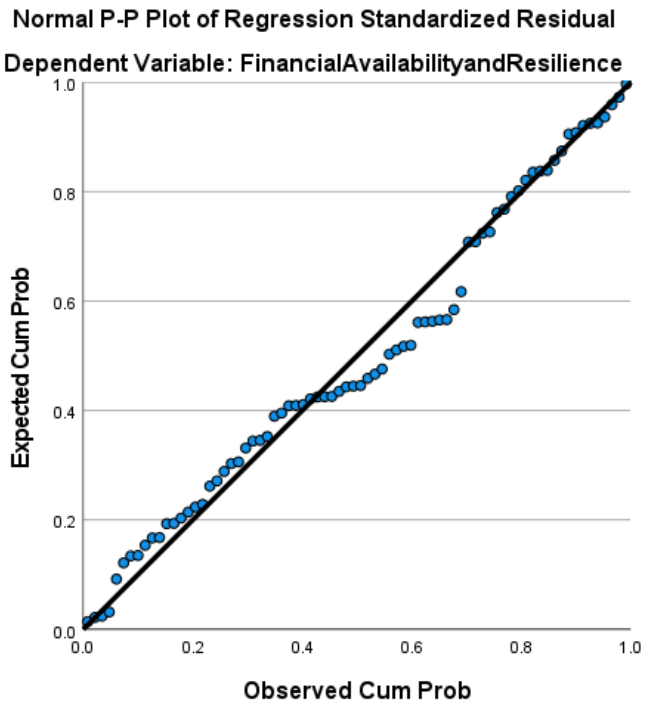
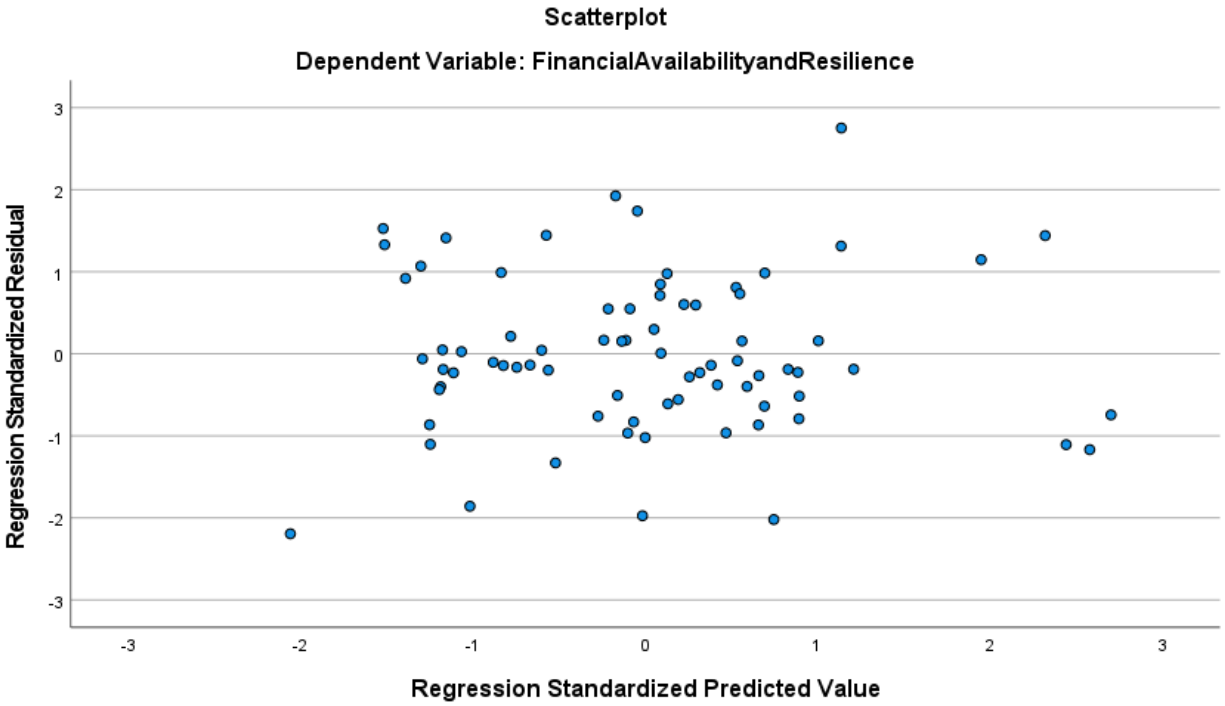
Appendix




Normal P-P Plot of Regression Standardized Residual
Dependent Variable: FinancialAvailabilityandResilience
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: FinancialAvailabilityandResilience
Regression Standardized Residual
Regression Standardized Predicted Value
3
2
1
0
-1
-2
-3