IMPACTS OF TECHNOLOGY INNOVATIONS AND ENTREPRENEURSHIP TRAINING ON SME PERFORMANCE IN NIGERIA

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 ABSTRACT

High youth unemployment and very high foreign exchange rates are the problems that Nigeria is currently faced with. Therefore, there is the urgent need for diversification and revamping of the economy. Small and medium enterprises (SMEs) are thus an important tool to achieve this. How therefore can acquisition of entrepreneurship training and adoption of technology enhance performance of SMEs, bring about economic recovery, and thus help to reduce the economic challenges. The instrument consisted of twenty items on a five-point Likert rating scale, which was administered on one hundred owners of manufacturing SMEs sampled using cluster, proportionate and random sampling procedures from some selected businesses across Sango Area of Ogun State . The results indicated that acquisition of entrepreneurship training and adoption of technology devices and platforms enhance productivity and profitability of SMEs in Nigeria. It is concluded that for manufacturing SMEs to operate competitively, profitably and significantly contribute to the economic growth of Nigeria, they need to continuously acquire newer entrepreneurial training; adopt and use innovative modern technologies.

Keywords: Entrepreneurial skills, adoption and use of technology, SMEs performance, competitive advantage, Nigeria

1.   INTRODUCTION

The necessity for economic growth has made SMEs' important roles to be acknowledged in many nations. Therefore, Their values, such as power of expansion, Job creations at relatively low capital cost, means of livelihood, provision and development of trained and untrained labor for potential industrial growth and the breeding ground for managerial and entrepreneurial talents have shown SMEs as indispensable sector in any economy (Ayanda & Laraba, 2011,Agwu, 2014; Okpara, 2011) . However, SMEs in Nigeria face monumental challenges such as weak strategic orientations, poor infrastructure, inadequate capabilities, poor management and inadequate technological skills' development and lack of export market knowledge/experience (Adegbite, Ilori, Irefin, Abereijo, & Aderemi, 2007,Agwu, 2014; Okpara, 2011).

These challenges are aggravated by a lack of adequate commitment and policy interventions of government to fix key infrastructures and support diffusion of technological innovations among firms. Given the amount of environmental turbulence and the near absence of institutional support and policy incentives, many African firms struggle to survive, and surviving firms often struggle to grow (for studies on African firms, see Egbetokun *et al.,* 2008; Oyelaran-Oyeyinka and McComick, 2007). Cooperation activities provide firms with access to complimentary technological resources (De Faria *et al.,* 2010) and also enable cost sharing, risk reduction and flexibility in the drive for value creation (Lavie, 2007). These network activities can take the form of informal linkages aimed at specific needs or short-term goals (Lavie, 2007; Mancinelli and Mazzanti, 2009), or formal alliances aimed at long-term objectives (Holmen *et al.,* 2005; Schilling and Phelps, 2007).

Given the peculiar challenges connected with the African context, it is important to fill the gap in empirical data about the impact of technological transfer among SMEs in Sub-Saharan Africa. Nigeria presents an archetypical context to examine the coping strategies of African firms with regard to technological innovation and small business performance in a challenging environment.

First, Nigeria is the most populous nation in Africa, and it is also one of Africa's biggest economies. Furthermore, it is also a window to Africa's ethnic and cultural diversity, with more than 300 language groups spread across the country's various geo-political zones.

In particular, the paper focusses on two research questions:

RQ1. Do technological innovations drive firm performance?

RQ2. Does entrepreneurship training enhances SMEs Performance?

In order to answer these questions, this study draws from a random survey of 100 Nigerian firms to illuminate the effectiveness or otherwise of technological innovations and entrepreneurship training.

2.   LITERATURE REVIEW

2.1   Technology innovations and performance of SMEs in Nigeria

Information communication technology (ICT) refers to the technology systems used to transmit, store, process, display, create, and automate information dissemination (Gunday, Ulusoy, Kilic, & Alpkan, 2011; Modimogale & Kroeze, 2011). These technologies include items such as television; fixed telephone lines; mobile phones; radio; satellite systems; video; computers; network software and hardware; and the equipment and services related to these technologies, such as emails, video-conferencing, blogs, and social media (Ali, Jabeen, & Nikhitha, 2016). Technology innovation is the systematic application of all sources of organized knowledge, such as literature, science, and the arts, geared toward organizational performance (Luppicini, 2005). Also, technological innovation contributes to firm performance through increase in labour productivity (Cainelli *et al.,* 2004; Jones and Corral de Zubielqui, 2017), improved resource efficiency (Adams and Comber, 2013) and increased sales and profit through access to new markets (Bhaskaran, 2006). For small firms, in particular, the propensity to innovate may take on an even greater significance for firm performance and competitiveness (Rhee et al., 2010). In other words, smaller firms can make up for their resource constraints and disadvantage relative to large firms by focusing more on innovative activities, and leveraging their flexibility and proximity to the market for superior business performance (Batra *et al.,* 2015). However, because the contributions of technological innovations to productivity often takes time, larger firms tend to have the advantage in terms of their resource capability to adopt and implement them (Abor and Quartey, 2010). The findings from this study contribute to the knowledge base regarding factors that affect ICT adoption by SME leaders as a business strategy to increase profitability. but the reality is that unreliable power supply limited and expensive Internet service, unreliable and expensive telecommunications, bad roads and other infrastructural services are not readily available in Nigeria are still influencing the SMEs decision to adopt technology. The leaders of many SMEs must provide the infrastructural services if they need to succeed, so they have limited resources left to invest in ICT. (Okundaye,Susan K. Fan and Dwyer, 2018). However, this scenario has created problems to many SMEs to survive.

2.2   Entrepreneurial training and performance of SMEs in Nigeria

Different countries define SMEs differently depending on their stage of economic growth (Berisha & Pula, 2015). The accepted principles for the definition of SMEs comprise staff numbers, investment level, and sales volume (European-Union, 2005). The European Commission defines SMEs as firms with 10 to 49 employees and medium-sized businesses as those with between 50 and 250 employees (Katua, 2014). Scholars have defined rural SMEs as those enterprises working within the agricultural value chain (Eskesen, Agrawal, & Desai, 2014). These include individual farmers, producers, service providers, and intermediaries. Nigeria is an archetypical context for a study of African firms. With an estimated population of 186 million (United Nations, 2016), it is Africa's most populous nation. It is also reputed to be one of African's largest economies. According to the recent available statistics, about 71 per cent of the population are reported to be living in relative poverty, and poverty rate has been put at 64.2 per cent in 2013/2014, increasing from 62 per cent in 2010 (World Bank, 2013). Moreover, the official unemployment rate increased from 11 per cent in 2006 to 24 per cent in 2011, and a great number of those employed are under-employed (Rogers, 2012). According to a 2014 report, the number of workers in vulnerable employment was very high at 77 per cent in 2012, and labour productivity remains very low (International Labour Organization, 2014). Small- and medium-scale enterprises, which constitute more than 90 per cent of businesses in Nigeria (The Economist Intelligence Unit, 2015), are considered critical for the country's goals of sustainable growth, poverty reduction and job creation. The Nigerian Federal Government reports that 17,284,671 micro-, small- and medium-scale enterprises in Nigeria,

with the vast majority of them classed as micro enterprises. Together they contribute about 75 per cent of employment, and about 40 per cent of the country's GDP (Federal Government of Nigeria, 2013). While, there is no single universally accepted definition of small- and medium-scale enterprises (SMEs), most definitions and classifications of SMEs are based on three main criteria: number of employees, firm turnover and value of assets (European Commission, 2005; Federal Government of Nigeria, 2013; Gibson and Vaart, 2008). In this paper, we adopt the number of employees as the main criteria to classify the firms, using the template proposed in the Nigerian National Enterprise Development Programme (Federal Government of Nigeria, 2013). While assets and annual turnovers are also important indicators of firm size, they are, unlike employee headcount, often limited in their international application, even in developing country contexts. For example, the assets criteria for a medium-scale enterprise in Thailand may be several times the assets requirement for medium-scale enterprises in Tanzania, as Thailand's GDP is nine times that of Tanzania (The World Bank, 2016). The growth and performance of SMEs in Nigeria have been hampered by, among other things, lack of financing, poor infrastructure, inadequate access to machinery and spare parts, low access to raw materials (Ehinomen and Adeleke, 2012; Mambula, 2002). Their competitiveness is also limited by deficiencies in human capital and entrepreneurial capacity (Abiodun, 2015). Furthermore, Nigeria's SMEs are generally limited in their capability to manage risks, including financial risks associated with fluctuations in the capital market, financial market and commodity market; operational risks arising from product failure and management fraud; and strategic risks related to competition, customer preference and policy issues (Yusuf and Dansu, 2013).

As highlighted in the foregoing, access to adequate financing is a major constraint for Nigeria's SMEs. Majority of start-up funds are derived from personal savings and assistance from family and friends, with less than 5 per cent of start-up funds obtained from financial institutions (Federal Government of Nigeria, 2013). Furthermore, bank lending rate is high – between 25 and 30 per cent. According to a 2012 report, less than 1 per cent of SMEs have had access to bank finance in the previous three years (Federal Government of Nigeria, 2013). As of 2011, a six-year average of commercial bank loans to SMEs represented only 0.41 per cent of total credit (Central Bank of Nigeria, 2014). These were in spite of a federal government scheme in which 200 bn naira fund was provided to "fast-track the development of the manufacturing SME sector of the Nigerian economy by providing guarantee for credit from banks to SMEs and manufacturers" (Central Bank of Nigeria, 2010, p. 1). In addition to the challenge of limited access to credit, operating cost for SMEs in Nigeria is very high, mainly due to the lack of constant power supply in the country. Firms have to generate their own power using alternative means, and this significantly increases production costs and reduces profit margins for firms, especially in the manufacturing sector (Federal Government of Nigeria, 2013). The most recent enterprise survey by World Bank indicated that, among other things, the electricity problem has worsened between 2007 and 2014, with number of electrical outages increasing from 25 to 32, and firms incurring greater losses due to electrical outages. In 2010, Nigeria's modest energy demand projections, to maintain a 7 per cent GDP growth, was set at 28,360 MW for the year 2015 (Sambo *et al.,* 2010). However, as of October 2016, the peak power generation was 2,687.2 MW (Federal Ministry of Power Nigeria, 2016). In addition to the direct impact on operation cost, inadequate power supply significantly limits SMEs capability to access, adopt and benefit from innovations, as these innovations, such ICT innovations, relies heavily on electric power supply (Nyakuma *et al.,* 2016).

Over the years the Nigerian Government has launched a wide range of policy initiatives to address the pressing needs of SMEs in the country. For example, the Small and Medium Enterprises Development Agency of Nigeria was established to help stimulate, coordinate and monitor the development of the sector. This is in addition to the work of the Corporate Affairs Commission, mandated to regulate the formation and management of companies in Nigeria and the Bank of Industry, whose core responsibility is to provide financial assistance to SMEs and support the expansion, diversification and modernisation of existing enterprises (Federal Government of Nigeria, 2013). However, the impact of these governmental and policy interventions have been limited. In some cases, the SME owners are not aware of the existence of government interventions (Jibrilla, 2013). Furthermore, the impact of the various initiatives have been hampered by poor implementation, bureaucracy and administrative bottlenecks, erratic financing of credit schemes initiated by governments, and the difficult conditions often set by banks and credit agencies for SMEs (Oni and Daniya, 2012).

3.   METHODS

The instrument consisted of twenty items on a five-point Likert rating scale, which was administered on some selected owners of manufacturing SMEs sampled using cluster, proportionate and random sampling

procedures from some selected businesses across Sango Area of Ogun State. Having employed proportional stratified and systematic sampling, the distribution of the questionnaires was based on the proportion of population of SMEs in Sango area. About twenty five days after the questionnaire have been emailed to the respondents, 85 completed questionnaires were received through e-mail and these 85 questionnaires were regarded as early responses which (after non useable ones have been removed) were further used to assess non response bias on the actual variables. In order to improve the response rate, a follow-up phone calls and series of Short Message Service (SMS) were sent to remind the exporting managers who were yet to return their questionnaires. This effort yielded the largest numbers of response compared to the first response. About 85 questionnaires were returned.

4.   RESULTS AND DISCUSSION

Hol: There is no significant relationship between technological innovations and SMEs performance

From table 4.1.1, there is a weak positive relationship between technological innovation and SMEs performance with correlation coefficient of 0.29 (R=0.29). The adjusted R-square is 0.11 indicating that about 11% variation in SMEs Performance is influenced for by a little change in Technological innovations.

TABLE 1.O Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.029a	.001	-.011	.89342

Source: Survey, 2019
a. Predictors: (Constant), SMEPERFORMA

TABLE 2.0 ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.055	1	.055	.069	.794b
	Residual	66.251	83	.798		
	Total	66.306	84			

Source: Survey, 2019
a. Dependent Variable: TECHINNOVATION
b. Predictors: (Constant), SMEPERFORMA

In order to test the validity of the model obtained, we went further by obtaining the ANOVA table, the F-value is 0.069 and the p-value is 0.000. This indicates that the model is adequate and sufficient in relating the technological innovation with the SMEs performance. Hence, the model is significant since the p-value is less than the significance level, we then accept the alternative hypothesis and conclude that there is a significant relationship between technological innovation and SMEs performance.
Table 3.0 is the coefficients table, the model is:

SMEPERFROMA= 7.503 + 0.33TECHINNOVATION

The model indicated that a unit change in TECHNINNOVATION triggers a 0.33 unit increase in

SMEsPERFORMA. The technological innovation is a little significant

TABLE 3.0 Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	7.503	.915		8.203	.000
	SMEPERFORMA	.033	.126	.029	.262	.794

Source : Survey, 2019

a. Dependent Variable: TECHINNOVATION

Ho2 : There is no significant relationship between entrepreneurship training and SMEs performance
From table 4.0 above , there is a weak positive relationship between technological innovation and SMEs performance with correlation coefficient of 0.265 (R=0.27). The adjusted R-square is 0.59 indicating that about 59% variation in SMEs Performance is caused   by an impact in entrepreneurship training.
TABLE 4.0 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.265[a]	.070	.059	.75584

Source : Survey ,2019

a. Predictors: (Constant), SMEPERFORMA

TABLE 5.0 ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.571	1	3.571	6.252	.014[b]
	Residual	47.417	83	.571		
	Total	50.988	84			

a. Dependent Variable: ENTRETRAIN

b. Predictors: (Constant), SMEPERFORMA
 and SMEs performance.

TABLE 7.0 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.112	.774		11.776	.000
	SMEPERFORMA	-.267	.107	-.265	-2.500	.014

SOURCE : SURVEY 2019

a. Dependent Variable: ENTRETRAIN

The model for the above is:

SMEPERFROMA= 9.112 – 0.267ENTRETRAIN

The model indicated that a unit change in ENTRETRAIN triggers a 26% unit decrease in SMEsPERFORMA. The ENTRETRAIN has a negative significance

5.   CONCLUSIONS

The main aim of this study was to analyze the impacts of technological innovation and entrepreneurship training on SMEs performance. In view of the competitive and challenging environment in which small businesses operate, it is imperative for entrepreneurs to develop innovative approaches that guarantee strong business performance while meeting their customers' expectations. The study's findings reveal that technological innovation influences SME performance and that the entrepreneur training needs room for improvement in order for it to enhance small business performance. Thus, SMEs can maintain a competitive advantage by utilizing IT innovation through a robust Entrepreneurial training and capabilities firm development.

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