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## Technological Innovativeness and Business Financial Performance of Medium Sized Enterprises in Southwestern Nigeria

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### **Abstract:**

*The study assessed the effect of technological innovativeness on financial performance of medium-sized enterprises. Specifically, the study evaluated the extent of technological innovativeness and financial performance of medium-sized enterprises. Primary data was used for this study. The sample size for the study was 384. Purposive sampling technique was used to select employees that held at least a supervisory management position from the randomly selected family businesses. The data were collected using a well-structured questionnaire. Data collected were analysed using percentages, mean, Pearson's correlation and ordinary least square regression analysis. The study showed a high degree of technological innovativeness (Grand mean =  $4.05 \pm 0.84$ ) among medium-sized enterprises in Southwestern Nigeria. The study further revealed a moderate financial performance (70.3%) among medium-sized enterprises. The study also showed that technological innovativeness ( $t = -0.469$ ,  $p > 0.05$ ) had a negative and significant effect on business performance of medium-sized enterprises in Southwestern Nigeria. The study concluded that technological innovativeness had negative and significant relationship with business financial performance among medium-sized enterprises in Southwestern Nigeria.*

**Keywords:** Technology, innovativeness, financial performance, medium-sized enterprises

### **1. Introduction**

In today's constantly changing and complex global economy, creation of new ventures and entrepreneurship development has gained so much attention from policy makers and researchers. Wiklund and Shepherd (2003) posited that entrepreneurship has become even more important to achieve and sustain competitive advantage in the enterprise space (Covin and Miller 2014). Because of globalization, SMEs (SMEs) are facing tremendous pressure from global competition. With customers around the world becoming more and more sophisticated, it is becoming increasingly difficult for SMEs to maintain and improve their business performance on time if they are not able to fully manage this pressure. In order to address the issues facing managers and business owners, both small and medium enterprises, especially in growing economies of the world, should take serious action to identify threats and opportunities, so that the social environment can ensure that the future is moving forward (Javalgi and Todd, 2011). In a more emerging economy, SMEs constitute the main driver of not only economic development, but of employment creation as well as the creation of social assistance (Van der Westhuizen and Garnett 2014).

However, medium-sized enterprises that value their commitment to the industry have been found to show strategic flexibility, defined as the ability to seek new opportunities, respond to threats in a competitive environment and add value when connected, and a culture of organizational accountability (Zahra, Hayton, Neubaum, Dibrell & Craig, 2008). This leads to obvious results and better financial results (Denison, Lief & Ward, 2004). At a strategic level, the success of many managerial innovation processes also depends on competitive effort, which may include in-depth knowledge of technological development and adequate analysis of network benefits. To prevent obesity and death, many mid-size companies are economically compelled to adopt new technologies (Alberto, 2007). Therefore, this study examined how technological innovativeness among medium-sized enterprises affect business financial performance in southwestern Nigeria.

### **2. Objectives of the Study**

The specific objectives of the study are to:

- Assess the socio-demographic characteristics of the respondents,
- Assess the extent of technological innovativeness of medium-sized enterprises,
- Evaluate the financial performance of medium-sized enterprises,
- Determine the effect of technological innovativeness on business performance.

### 3. Literature Review

Innovativeness in business is linked to the company's tendency to adopt and support novel ideas, innovations, experiences and creative processes that can deliver new products, services or technological processes (Lumpkin and Dess, 1996). From the position of Covin and Miles (1999), innovativeness is the behavior of a business enterprise that supports and promotes new ideas, experiences and creative processes much faster than competitors. Also, Baker and Sinkula (2009) described firm innovativeness as a primary desire to break away from or surpass existing ideas, get rid of obsolete technology, practices and business processes using current technological advancements. Other recognized innovations include a creative atmosphere and introducing new ideas, experiences and creative processes that can lead to new products, services or technical processes or opening new markets. (Li *et al.*, 2008, Mengue and Auh 2006). Innovation can thus be defined as the process of creating new products, production processes or service lines. According to Schillo (2011), 'innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or a different service. It is capable of being presented as a discipline, capable of being learned, capable of being practiced. Entrepreneurs need to search purposefully for the sources of innovation, the changes and their symptoms that indicate opportunities for successful innovation. And they need to know and to apply the principles of successful innovation'.

In terms of technological innovation, this process includes a number of components designed for repetition rather than flow, that is – innovate, share and implement. Innovation is a personal process in which people establish relationships based on the expertise and competencies required to translate ideas into concepts and models (Nonaka, 1991). Establishing mutual understanding, gaining trust and building respect among individuals and work teams or groups is central to firm level innovativeness which is based on the strength of networks within the organization (Pittaway *et al.*, 2004; Edward, Delbridge and Munday, 2005). This network may further expand to including boundaries that discuss the exchange of 'know-how' between innovators and end-users of this 'knowledge solution'. Professional associations (for example, consultants) play an important role in the sharing and implementation of new ideas, technological innovations and creative interventions (Newell *et al.*, 2002).

Technology was one of the key factors for success for SMEs (Rahman, Yaacob & Radzi, 2016). Tidd and Bessant (2010) described success in medium enterprises as, among others, the introduction of technology, creation of innovations for competitive market edge in the firm's industry. This simply implies that the present day successful medium sized enterprises are those who are quick to leverage on technology, iterate and innovate for better financial and non-financial performance. Technological innovations for entrepreneurs refer to new and creative solutions that are practicable, sellable, scalable and sustainable. As mentioned in the report by OECD (2005), tech – innovations like other forms of innovation can be explained as a process initiated by the perception and conception of a new idea, market and /or a new service using technology to develop value around it. The novelty of this value creation is what makes it an innovation or invention. This leads to development, production and marketing tasks aimed at commercial success of the invention (Garcia and Calantone, 2002). By contrast, smaller organizations are known to be more flexible and bureaucratic and faster design (Nooteboom, 1994), and large companies have come to recognize the importance of innovation in small businesses. This perspective is reflected in several research papers that support the idea that SMEs perform well when launching creative activities (Freel 2000; Westerberg and Wincent, 2008), such as research and development (R&D) and productivity growth (Block 2012). A study by Bruderl and Preisendorfer (2000) emphasized the significance of innovation in small companies. Among other things, they found that innovation is an important factor in predicting business financial growth, which should not be ignored. Sirelli (2000) further affirmed that the objective of emerging (small and medium) businesses is to promote innovation and creativity that will lead to better financial results, stronger growth, and more employment opportunities. From this perspective, it has become important for growing companies, especially medium-sized companies, to design and use technology not only to differentiate themselves, but also to succeed in their business (Zahra *et al.*, 2014).

### 4. Methodology

The study area for the study was Southwestern states of Nigeria. The region comprise of six states which are Oyo, Osun, Ogun, Ekiti, Ondo and Lagos States. This is because these states account for the highest number of family businesses in South-west Nigeria according to the most recent available data from SMEDAN (2013).

S/N	States	Total Number of Medium-Sized Firms	Total Number of Employees
1.	Ekiti	023	1805
2.	Lagos	257	15826
3.	Ogun	040	1702
4.	Ondo	044	2235
5.	Osun	51	2599
6.	Oyo	176	9695
Total:		591	33,861

Table 1: Distribution of Medium-Sized family Businesses in South-West Nigeria By total Number & Total Employment  
(Source: SMEDAN, 2013)

From the population sampling table at 5% level of significance, a total of 384 respondents was selected using purposive sampling technique, based on the scale developed by Barlett, Kotrlik and Haggins, (2001). The respondents were purposively selected from firms with a minimum of 50 and maximum of 249 employees as inclusion criteria for the medium-sized family businesses. The data collected was analyzed using descriptive and inferential (OLS regression and Pearson's Correlation) statistics.

## 5. Results and Discussions

### 5.1. Socio – Demographic Characteristics of Respondents

The data in Table 2 reveal that 59.4 percent of the respondents were male while 40.6 percent were female. This shows that there are more male than female in the operations of small and medium-sized enterprises. This is in agreement with the findings of the collaborative survey by Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) and National Bureau of Statistics (NBS), (2013) that small and medium-sized enterprises has less than half (43.32%) of employees as female (SMEDAN, 2013).

The age distribution shows that 60.2 percent were between 21 to 30 years of age, 27.3 percent were between 31 to 40 years, 9.9 percent were between 41 to 50 years of age, 2.3 percent were either 20 years old or less, 0.3 percent were 31 years or older. The mean age of the respondents was  $30.46 \pm 7.05$ . While the study corroborates the findings from National Bureau of Statistics (NBS) that small and medium-sized enterprises are populated with able work force below 35 years of age (SMEDAN, 2013), it disagrees with the findings from Czech Republic by Urbancová and Hudáková, (2015) that SMEs prefer to employ older, more experienced employees who help their younger coworkers with their development.

Data in Table 2 further show that 34.6 percent of the respondents had a Bachelor's degree, 27.3 percent had a High National Diploma, 17.2 percent had an Ordinary national Diploma, 8.1 had a National Certificate in Education, 7.3 percent had a secondary school certificate while few (5.5%) had other higher educational qualifications. It can be inferred that most of the respondents had some form of formal tertiary education. Agwu and Emeti, (2014) posited that entrepreneurs or managers of SMEs with higher formal education, training and government assistance would therefore be expected to grow faster than those without these qualities. According to Carlson and Gilmore (2000), essential factors that motivate growth and business success include skilled workforce and educated leaders. Having skilled personnel can help in assisting businesses to gain more innovative and competitive advantages especially for emerging enterprises.

Furthermore, the table shows that most (85.2%) of the respondent had 1 to 5 years of experience, 12.7 percent had 6 to 10 years of experience, 1.1 percent had 11 to 15 years of experience, 0.9 percent had 16 to 20 years of experience while 0.3 percent had at least 21 years of experience. The mean year of experience is  $3.7 \pm 3.0$ . This shows that SMEs offers entry level job opportunities requiring little or no prior experience. However, Shane and Vankataraman, (2000) opined that availability of innovative persons is paramount in this process of SME development, and so SMEs should get employees who can use their skills, experience and knowledge to start and maintain new businesses successfully. This is further emphasized by Emezie (2017) when he argued that lack of experienced employees contributes to the challenges of SMEs in the 21<sup>st</sup> century.

Variables	Frequency (F)	Percentage (%)	Mean±SD
Gender			
Male	228	59.4	
Female	156	40.6	
Age			
≤ 20	09	2.3	30.46±7.05
21 – 30	231	60.2	
31 – 40	105	27.3	
41 – 50	38	9.9	
≥ 51	01	0.3	
Highest education level attained			
SSCE	28	7.3	
NCE	31	8.1	
OND	66	17.2	
HND	105	27.3	
BSC	133	34.6	
OTHERS	21	5.5	
Years of experience			
1 – 5	327	85.1	3.7±3.0
6 – 10	49	12.7	
11-15	04	1.1	
16- 20	04	1.1	

Table 2: Socio – Demographic Characteristics of Respondents

Source: Field Survey, 2019

### 5.2. Technological Innovativeness

Most (84.1%; SA – 50.8%, A – 33.3%) of the respondents agreed to the statement ‘the firm favors a strong emphasis on Research and Development, tech leadership and innovation while 12 percent disagreed. The agreement index was  $4.29 \pm 0.87$ . Also, the introduction of dramatic changes in existing products and/or services by the firm had an agreement index of  $4.09 \pm 0.76$ , while the willingness to trip new ways of doing things and seek unusual or novel; solutions had the lowest agreement index of  $4.06 \pm 0.84$ , it can be said that family businesses are constantly open to implementing innovative ideas in line with existing market opportunities which corroborates the findings of Reguia, (2014) that innovation focused on the step-by-step implementation of new ideas r profit making and exploitation of market opportunities. As necessity is the mother of invention, innovation is the heartbeat of every enterprise. The moment a firm stops to innovate, death is inevitable hence Lumpkin *et. al.*, (2009) posit that firm must promote innovativeness at both individual and team levels in the organization. Family businesses for the purpose of competitive advantage and survival must promote a culture of innovativeness that engages and experiments with new ideas.

Innovativeness	SA %	A %	U %	D %	SD %	Mean $\pm$ SD
Research and development	50.8	33.3	12.8	1.3	1.8	4.29 $\pm$ 0.87
Introduction of changes to existing products	28.1	58.6	7.8	5.2	0.3	4.09 $\pm$ 0.76
Introduction of new products	21.9	62.0	6.8	8.9	0.5	3.95 $\pm$ 0.82
Exploration of new processes and novel solutions	20.8	57.0	10.9	9.6	1.6	3.85 $\pm$ 0.90
Grand Mean $\pm$ SD						4.05 $\pm$ 0.84

Table 3: Technological Innovativeness of Medium-Sized Enterprises

Source: Field Survey, 2019

### 5.3. Business Financial Performance of Medium-sized Enterprises

Data in Figure 1 shows that majority (70.3%) of the medium-sized enterprises had a moderate financial performance while 15.3 percent and 14.4 percent had low and high performance respectively. This shows that medium-sized enterprises in the study area were not performing badly financially.

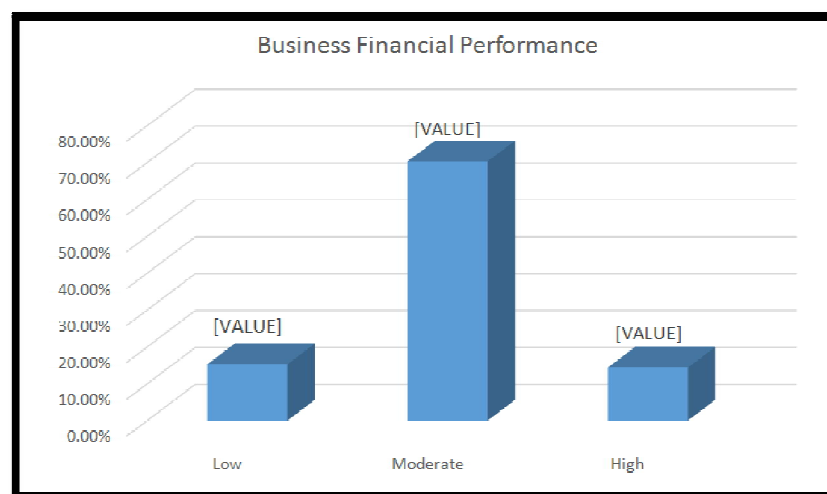


Figure 1: Bar Chart Showing the Financial Performance of Medium-Sized Businesses in Southwestern Nigeria

Source: Field Survey, 2019

### 5.4. Effect of Technological Innovativeness on Business Financial Performance

Results in Table 4 show the regression coefficient ( $\beta$ ) of the independent variable. The regression coefficients measure the rate of change in the dependent variable brought about by a unit change in the corresponding independent variables. The table shows that technological innovativeness ( $\beta = -0.028$ ) had a negative regression coefficient. Although, firm innovativeness has been found to be positively affect business performance (Swierczek & Ha, 2003; Zhang & Zhang 2012) but the result of this study shows a negative regression between innovativeness and business performance among medium sized family businesses. It can be inferred from this that while businesses may be encouraged to pursue and support innovations, medium sized family businesses may be having challenges converting innovative ideas into profitable business products, lines or services. Hence, this findings disagrees with the report of Okpara (2011) that technological innovativeness is a significant predictor of sales growth among SME's in Nigeria but agrees with Sascha, Rigtering, Hughes and Hosman, (2012) that medium sized businesses with high level of innovativeness performs better in an environment with higher level of turbulence. This is further affirmed by Idowu (2013) that innovativeness among medium-sized firms in Nigeria had no relationship or influence on business financial performance.

Variables	Standardized Regression Coefficient ( $\beta$ )	T-value	P-value
Constant		1.600	0.110
Technological Innovativeness	-0.028	-0.469*	0.039

Table 4: Summary of Regression Analysis Showing the Effect of Technological Innovativeness on Business Financial Performance

Source: Field Survey, 2019

\*Significant at 0.05 (99%)

Dependent Variable: Business Financial Performance

### 5.5. Hypothesis Testing

- Ho: There is no significant relationship between technological innovativeness and business financial performance.

Data in Table 5 show correlation analysis testing the relationship between entrepreneurial orientation and business performance of medium-sized family businesses. The table reveals that technological innovativeness ( $r = -0.243^*$ ,  $p \leq 0.01$ ) had a strong, negative and significant relationship with business financial performance of medium-sized family businesses. Thus, business financial performance moves in opposite direction with technological innovativeness. This means that as technological innovativeness increases among medium-sized enterprises, the business financial performance decreases. Therefore, this study agrees with the position by Eneh (2010) that for medium-sized businesses to keep up with the pace of business mutation and innovation, it is important for medium-sized businesses to develop and maintain other entrepreneurial proficiencies.

Variables	Correlation coefficient (r)	Coefficient of determination ( $r^2$ )	Percentage Contribution	P - value
Innovativeness	-0.243*	0.059	5.90	0.001

Table 5: Correlation Analysis between Technological Innovativeness and Business Financial Performance of Medium-Sized Family Business

Source: Field Survey, 2019

\*Correlation Is Significant at 0.01 Levels

Dependent Variable: Business Financial Performance

## 6. Conclusion

From the findings, the study concluded that medium-sized enterprises had high level of technological innovativeness but moderate level of financial performance. Also, although technological innovativeness had a strong relationship with business financial performance, a negative effect is felt as innovativeness increases. While it is important for firms to innovate to survive the global competition in the enterprise space, it should be noted the innovations may be expensive and have a negative effect on firm financial performance.

It is therefore recommended that emerging firms should encourage technological innovativeness using cost effective approaches and Government should invest in infrastructural development to provide a business climate that supports innovation among medium-sized businesses.

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