# Innovation Adoption Determinants and Competitive Advantage of Selected SMEs in Ado-Ota, Ogun State, Nigeria.

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Abstract— Rivalry within the Nigerian business environment has made the competitive atmosphere fierce, even amongst small and medium enterprise (SMEs). This has created a dilemma for firms desiring to remain relevant and has informed the urgent need to achieve sustained competitive advantage through innovation adoption. This paper investigated the effect of innovation adoption determinants on competitive advantage of SMEs in Ado-Ota local government area, Ogun State, Nigeria. Empirical and theoretical reviews were used to establish theeffect of innovation adoption on competitive advantage. Primary data collected with a pre-tested questionnaire administered to four hundred and forty-six managerial cadre of selected SMEs was used. The regressed data results revealed that innovation adoption determinants exhibited positive significant effects on the competitive advantage of the surveyed selected SMEs. The paper recommends that owners-managers of SMEs should seek to selectively adopt innovation in order to gain competitive advantage and achieve sustainable superior performance over their rivals on the long-run.

Keywords— Innovation adoption, Competitive advantage, SMEs, Technological capability, Financial capability.

# I. INTRODUCTION

The dependence on Small and medium enterprises (SMEs) to improve and sustain the economies of developed and developing nations has resonates their fundamental importance in today's business world. Robu (2013), Zafar and Mustafa (2017) sustained that SMEs have the power to fuel household income growth and uplift people from chronic poverty. As catalyst, SMEs drive economic growth and development, and are universally recognized as tools for unemployment deflation (Hassan, 2016; Peña-Vinces, Casanova, Guillen & Urbano, 2017; Zieman, 2014). In addition, Ensaria and Karabay (2014) postulated that a nation's economic vibrancy is a derivative of dynamic and

robust small and medium enterprises. Likewise, due to the increased competitive nature of the business environment, scholars (Robu, 2013; Zafar& Mustafa, 2017; Zieman, 2014) in the field of entrepreneurship and stakeholders in the manufacturing industry have been interested in studying and understanding sources of SME performance especially in the aspect of competitive advantage (Agbawodikeizu, 2018).

As the global competitiveness continues to follow significant trends, the urgency to embrace innovation adoption as a strategy to gain competitive advantage and stimulate performance of small and medium businesses even in Nigeria has begun to grow (Olughor, 2015). Despite this assertion, very few SMEs in Nigeria have embraced innovation in order to reap its benefits (Taiwo, Falohun, &Agwu, 2016). Furthermore, empirical studies have been conducted to examine the relationship between innovation adoption and firm performance, however not all haveconnected innovation adoption with competitive advantage (Abdu &Jibir, 2017; Eniola&Ektebang, 2014; Ojo, Petrescu, Petrescu, &Bîlcan, 2017; Olughor, 2015; Uchegbulam, Akinyele, &Ibidunni, 2015).

In addition, majority of the aforementioned investigations did not focus on the interactions between innovation adoption and competitive advantage in SMEs in Ota, Ogun State, Nigeria. Moreover, a number of studies carried out in Nigeria (Abereijo&Fayomi, 2005; Akpan-Obong, 2007; Padachi, 2012; Sokoto& Abdullah, 2013) only attributed SMEs' high failure to their inability to achieve competitive advantage without innovation adoption. In light of the foregoing, this study examined the effect of innovation adoption determinants on competitive advantage of selected SMEs in Ota, Ogun State, Nigeria. The work is structured into four main parts such as introduction; literature and theoretical review, methodology, data analysis/presentation, and conclusions/recommendations.

#### LITERATURE REVIEW

Scholarly discourse within this work focuses on conceptual, empirical and theoretical undertones have been deliberated upon to enable readers have an interesting robust view of authors' positions on the constructs and the interactions between SMEs innovation adoption and competitive advantage.

# 2.1 Innovation Adoption

II.

Rogers (1995; 2003) portrayed innovation adoption as deliberate decision to initiate and utilize innovation to change the competitive landscape within an industry. This course of action enables entrepreneurs to maximize return on investment. Innovation adoption implies the introduction of a bundle of new practices/actions that contribute decisively to the successful development and progression of the enterprise(Zieman, 2014). The core motive for innovation adoption is to achieve superior organizational performance and increased competitive advantage. According to Agbawodikeizu (2018) innovation adoption is a vivacious process capable of reawakening a dying company as well as providing a formidable base for increased performance in a seemingly vigorous firm. Innovation adoption enables SMEs to survive tensed competition, global economic catastrophe and strive against larger organizations.

Literature have justified that a combination of intrapreneurial culture, technological capability, innovative culture and financial capability will bring about the decision to adopt innovation (Agbawodikeizu, 2018). Intrapreneurial culture of SMEs dictates employees' resources use, time and financial budgets to work on unique ideas because they know that creating space for their employees to be inventive yields the most valuable contributions thereby increasing the tendencies to adopt innovations speedily (Gunjan & Bandyopadhyay, 2016). Technological capability constitutes firms' internal ability and future potential to apply firm-specific technological power to solve technical problems and/or enhance the technical functioning of its production process and/or its finished products and to generate new knowledge and skills in response to the competitive business environment (Ince, Imamoglu, &Turkcan, 2016).

Innovative culture consists of constant innovative processes that have dominated an organization's way of life. Employees in a culture of innovation are unafraid to improvise or experiment while managers are risk-tolerant and tend to aggressively search for, create and exploit opportunities (Padilha&Gomes, 2016). Consequently, the financial capability of SMEs is very crucial when it comes to innovation activities and it is an important factor that determines the performance of a firm (Ngah& Ibrahim, 2009). As a result of SMEs' size, SMEs are flexible and are more able to adapt to changes within the market environment than large firms (Aryeetey&Ahene, 2005; Udechukwu, 2003). One of the key means for SMEs to remain competitive in harsh conditions is innovation adoption.

#### 2.2 Competitive Advantage

According to Besanko (2010), a firm achieves competitive advantage if it gains a higher economic efficiency or profit vis-a-vis the average rate of profit in the same market or industry. However, Peteraf (2010) viewed competitive advantage from financial indices with particular allusion to retention of earnings higher than normal which bear resemblance to Besanko (2010). Although financial parameters are not the only measurement of competitive advantage, the work of Porter, 1990) addressed it from strategic perspective by demonstrating that superior performance relative to other competitors in the same industry or the industry average connotes competitive advantage. Similar view-point was observed that competitive advantage is a derivative of firms' buddle of unique agility, warehousing and deploying core competencies to mitigate imitations or duplication of its competitive resources (Gaya, Struwig, & Smith, 2013). Covne (2010) argues in the direction of creating sustainable competitive advantage with reference to market-centric philosophy; customers need to recognize the differences between a firm's products and those of the competitors. The differences in product, processes and systems must have been created due to the firm's differentials in terms of resources possession and utilization that are not accessible through market structure by its competitors.

Švárová and Vrchota (2014) posits that the fundamental thrust of innovation adoption is to create competitive advantage dominance which constitutes the bedrock of business success. Thus, firm's potentials are harnessed, aligned and utilized to achieve predetermined goal by through tactical operational and results-oriented decisions based on adopted innovations. McAdam and Keogh(2004) created a congruence by demonstrating that statistical relationship exists between firms' performance and depth or familiarity with innovation and research. This assertion emanated from an integrated innovation-performance analysis carried which Al-Ansari (2014) sustained among manufacturing firms in Turkey. The gap in McAdam and Keogh (2004) was revisited by Al-Ansari (2014) who explored different aspects of firm performance-innovation (competitive advantage), production, market and financial and presented evidence of symmetrical alignment. Olughor

(2015) contributed to the discussion on how innovation affects business performance in small and medium-sized enterprises (SMEs) in an up-and-coming market, like Nigeria and a profound statistical significant relationship was discovered.

# 2.3 Innovation Adoption and Competitive Advantage

There is an academic consensus among scholars (Apulu, 2012; Olughor, 2015; Rogger, 2003) regarding the positive effect of innovation adoption on SMEs' performance with respect to competitive advantage. Notable researchers (Apulu, 2012; Love & Roper, 2015; Rajapathirana& Hui, 2017; Skiltere&Jesilevska, 2013) have systematically examined innovation adoption and its effect on the competitive advantage of SMEs with result pointing to positive relationship. The aforementioned studies assert that certain firm-specifics enhance the ability of SMEs to adopt innovation, thus improving their competitive advantage. Correspondingly, Aziz and Samad (2016) examined firm-age moderating effect on the interaction between innovation adoption with results indicating strong positive impact on competitive advantage.

Likewise, Otejere, Amadi, Echendu and Okorhi (2015)study revealed that innovation has a strong positive impact on competitive advantage which Aziz and Samad (2016) seemed to sustain.Corroborating the results of Otejere, *et al* (2015) and Aziz and Samad (2016) is Akinwale, Adepoju and Olomu (2017) that innovation adoption significantly drives competitive advantage especially product innovation. In a similar perspective, Salehi and Abdollahbeigi (2017) revealed that that constant investment in productand technology innovation had a significant relationship with firms' competitive advantage. Synthesis of the different views appeared to show that new or improved product or process of production continues to create firm's competitive advantage over others in themarket.

This study by Akinwale, Adepoju andOlomu (2017) on the impact of technological innovation on SME'sprofitability in Nigeriaexamined the impact of research and development (R&D) expenditure, product and process innovations on SMEs performance in the manufacturing industry in Nigeria. The results with least squares method showed that R&D spending by the firms as well as product and process innovation has significant impacts on the firm's performance. Also, training of workforce constitutes the major innovationactivities in the Nigerian manufacturing SMEs as against in-house andoutsourced R&D activities. This study suggests improvement in R&D spendingand other technological activities which are expected to increase SMEs'profitability and thus generate more employment in the country.

# 2.4 Diffusion of Innovation Theory

Diffusion of Innovation Theory (DOI) was first introduced by Everett Rogers (1995) to elucidate the diffusion of innovation process. The theory seeks to explain how, why, and at what rate new ideas and technologies spread. The spreading out of innovation is a process by which, through certain channels, innovation is communicated among the members of a social system over time (Rogers, 1995). Consequently, it is a process that spreads innovation out from its discovery or creation-source to the user or its adapter, a process that occurs in the society as a group process (Rogers, 2003). Diffusion of innovation theory model expresses that people cannot potentially expect to accept innovation as long as adopters lacks information or not aware of the innovation or its benefits. Awareness and positive mind-set and attitude toward innovation come from information about innovation (Rogers, 1995 & 2003). The adoption of innovation is considered as part of the innovation diffusion process and a measure of its success (Murad &Thomson, 2011). One of the reasons for the adoption of innovation is the desire of organizations to achieve superior organizational performance and proliferation of competitive advantage. In Nigeria, SMEs recurrently prove Roger's innovation theory appropriate but the practice is hindered by lack of information and at times unconsciously diffused.

# 2.5 Dynamic Capability Theory

The Dynamic Capabilities Approach emerged in the 1990s and added the missing dynamic perspective to the Resource-Based View. Teece, Pisano, and Shuen(1997) disseminated the concept of dynamic capabilities, which encompasses the capacity to perceive and seize new opportunities, to reconfigure and protect knowledge resources and assets, as well as competencies and complementary resources, in order to achieve sustainable competitive advantage. Dynamic capability theory entails the ability of a firm to speedily coordinate, integrate, build and reconfigure internal and external competences in order to achieve competitive advantage in a rapidly changing environment (Lim, Stratopoulous,&Wirjanto, 2012: Teece. Pisano.& Shuen.1997).

The dynamic capabilities view focuses on the issue of competitive survival in response to rapidly changing contemporary business conditions. It explicates the rationale behind some enterprises that are able to steadily achieve competitive advantage in dynamic markets (Ferdinand, Graca, &Easterby-Smith, 2004). The criticisms of dynamic capability theory are that the theory is incomplete in terms of specifics (Arend&Bromiley, 2011). They argue that the theory is not able to explain when there is need for a change and when not to change.Since dynamic capability theory includes those capabilities required to address consumer changes and technological opportunities (Teece, 2007), it can also support the understanding of innovation adoption of firms, which is the focus of this study.

# III. METHODOLOGY

This study was premised on the framework that showed the relationship that exists between innovation adoption and competitive advantage. The a priori expectation is that innovation adoption exhibits positive significant effect on competitive advantage. In order to achieve the aforementioned, the study adopted survey research design and stratified sampling technique in order to collate primary data over a section of time. The total population comprises of two thousand, four hundred and twenty-five management staff of selected SME's domiciled in Ado-Ota local government area. The SME's were selected based on their Medium Enterprises registration with Small and Development Agency of Nigeria (SMEDAN) with constant operational period of above five(5) years. The sample size was determined through Yamane (1967) which gave a scientific size of three hundred and forty-three (343). 30% non-response rate was added to cushion for attrition. The sample size arrived at was four hundred and forty-six(446).

The study used a 6-point Likert-type scale questionnaire with specific items ranging from strongly agree to strongly disagree and the instrument contains three sections:section A coveredrespondents' bio-data, B consisted of innovation adoption variables (i) intrapreneurial culture (ii) technological capability (iii) innovative culture (iv) financial capability, and С covered competitive advantage.The research instrument's validity was established through exploratory factor analysis with Kaiser-Meyer Olkin (KMO) test value of 70 percent and Bartlett's Test of Sphericity with p-value < 0.05. KMO and Bartlett's

Test of Sphericity measure sampling adequacy and Average Variance Extracted (AVE) > 0.05 was conducted as additional evidence of convergent validity. The internal consistency reliability was established with Cronbach Alpha Coefficient ranging from 70% to 90%

# Model Specification

#### The model was specified econometrically;

Y	=	f(X)
Х	=	$(x_1, x_2, x_3, x_4)$
IAt	=	Innovation Adoption Predictors (IAP)
<b>y</b> 1	=	Competitive Advantage (CA)
X1	=	Intrapreneurial Culture (IntC)
X2	=	Technological Capability (TC)
X3	=	Innovative Culture (InnC)
X4	=	Financial Capability (FC)
$\beta_0$	=	Constant Term
$\beta_1$ - $\beta_4$	=	Regression Coefficients to be estimated
CA	=	$\beta_0 + \beta_1 IntC + \beta_2 TC + \beta_3 InnC + \beta_4 FC + \mu_i$
		Eqn (1)

In order to ensure anonymity of the respondents, the researchers ensured that names and other respondents' traceable personal details were not sought for or documented anywhere in the study. Also, in the course of carrying out the research, the researchers gave ensured that considerable attention to ensure confidentiality and voluntary participation in data collection.

### **Results and Discussions**

The major focus of this study is to investigate the effect of innovation adoption on competitive advantage of selected SMEs in Ado/Ota Local government area. The analysis was ascertained via the aid of the statistical package for science solution (SPSS 21.0). Tables 1(a) and Tables 1(b) depicts the multiple regression output of the variables under study with results of the fitness of the model, analysis of covariance, coefficient of determination. The findings, interpretation and implications follow thereafter.

Model		Sum	of	Df	Mean Square	F	Sig.	Std. Error of the
		Squares						Estimate
1	Regression	741.009		4	185.252	24.929	0.000 <sup>b</sup>	2.726
	Residual	2801.577		377	7.431			
	Total	3542.586		381				
$R = 0.457^{a}$ ; R Square = 0.209; Adjusted R Square = 0.201								
a. Dependent Variable: Competitive Advantage								
b. Predictors: (Constant), Financial Capability, Intrapreneurial Culture, Innovative Culture, Technological Capability								

Table.1(a): Regression Model Summary

Source: Field Survey Result, 2018

Table 1(a) elucidates the multiple linear regression analysis which reveals the overall model fit of innovation adoption on competitive advantage of selected SMEs in Ado Ota local government area, Ogun State. The regression equation in Table 1(a) depicts that innovation adoption proxied by financial capability, intrapreneurial culture, innovative culture and technological capability can be explained by 20.1% of the variability in competitive advantage (Adj.  $R^2$ =0.201, p<0.05). The correlation coefficient, R at 20.9% denotes alow/weak positive relationship between the prognosticators, innovation adoption on competitive advantage of selected SMEs. This implies that discrepancies in the financial capability, intrapreneurial culture, innovative culture and technological capability have positive outcomes on competitive advantage of selected SMEs.

Model		Unstandardized Coefficients		Standardized	Т	Sig.
				Coefficients		
		В	Std. Error	Beta		
1	(Constant)	9.779	1.616		6.053	0.000
	Intrapreneurial Culture	0.031	0.069	0.025	0.451	0.652
	Technological Capability	0.092	0.058	0.093	1.574	0.116
	Innovative Culture	0.180	0.063	0.165	2.863	0.004
	Financial Capability	0.267	0.054	0.277	4.980	0.000

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Table 1(b) Regression Coefficients

Source: Field Survey Result, 2018

The established regression equation is expressed as follows:

CA = 9.779 + 0.031IntC + 0.092TC + 0.180InnC + 0.267FC

Where: CA	=	Competitive Advantage
IntC	=	Intrapreneurial Culture
TC	=	Technological Capability
InnC	=	Innovative Culture
FC	=	Financial Capability

The regression equation above indicates that holding all the independent variables (intrapreneurial culture, technological capability, innovative culture and financial capability) to a constant zero, competitive advantage of selected SMEs would be 9.779. The findings also show that taking all other independent variables at zero, a unit increase in intrapreneurial culture would cause an increase in competitive advantage of selected SMEs by a factor of 0.031. The findings also show that taking all other independent variables at zero, a unit increase in technological capability would cause an increase in competitive advantage of selected SMEs by a factor of 0.092. A unit increase in innovative culture would cause an increase in competitive advantage of selected SMEs by a factor of 0.180. Also, an increase in financial capability would cause an increase in competitive advantage of selected SMEs by a factor of 0.267. This clearly shows that intrapreneurial culture, technological capability, innovative culture and financial capability has positive effect on competitive advantage of selected SMEs. The results further reported that innovative culture ( $\beta = 0.180$ . t = 2.863, p < 0.05) and financial capability ( $\beta = 0.267, t = 4.980$ ,

p<0.05) are statistically significant in predicting competitive advantage of selected SMEs while intrapreneurial culture ( $\beta$ = 0.031, t = 0.451, p>0.05) and technological capability ( $\beta$ = 0.092. t = 1.574, p>0.05) were not significant. In the results, financial capability had the greatest and significant effect on the competitive advantage of selected SMEs( $\beta$  = 0.267,t = 4.980, p<0.05) followed by innovative culture ( $\beta$  = 0.180. t = 2.863, p<0.05). In coming up with the final model, only the significant variables, financial capability and innovative culture were retained. The regression equation established becomes:

$$CA = 9.779 + 0.180InnC + 0.267FC$$
  
..... Eq. (ii)

For testing the hypothesis, the regression coefficients should be significantly different from zero [ $\beta i \neq 0$  (i = 1, 2]. Since some of the regression coefficients were not significant and not also statistically different from zero as indicated in Table 1b, the hypothesis cannot be rejected.

#### IV. DISCUSSION OF FINDINGS

The findings have strong implications for economies striving to gain competitive edge for the potential SME

population in that have outgrown the earlier challenges of the "liability of newness" as the focus were firms in operation for over five (5)years. It implies that ensuring that the capabilities in the organization operate in an innovative atmosphere, will have implied effect in bring out the intrapreneurial capabilities in the unique human resources and will help differentiate them in the industry in which the firms play. Consequently, these intrapreneurs are able to utilize technological capabilities and financial capabilities in providing increase the competitive advantage of the firm.

The results of multiple regression analysis for effect of innovation adoption predictors (intrapreneurial culture, technological capability, innovative culture and financial capability) on competitive advantage of selected SMEs showed a significant effect. Although, the results showed positive relationship between the variables, only financial capability had the greatest and significant effect on the competitive advantage of selected SMEs ( $\beta = 0.267, t = 4.980, p < 0.05$ ) followed by innovative culture ( $\beta = 0.180, t = 2.863, p < 0.05$ ).

This finding is in congruence with previous studies carried out by Aziz and Samad (2016), Soltani and Hosseini (2012), Ekawatiet al. (2016) and Akinwaleet al. (2017) who found that innovation in product technology had a significant relationship with competitive advantage. The findings of this study are supported by Otejere, et al (2015) who found that innovation has a strong positive impact on competitive advantage. The findings of this study are also concurrent with the results established by Rahaman and Chowdhury (2016) in their research which showed that ICT adoption can directly contribute to improving the performance of service SMEs in a different way and supporting to face challenges in a competitive business world to gain significant competitive advantage. The result is also supported by studies carried out Padilha and Gomes (2016), Motilewaet al. (2015) and Ulusovet al. (2015) where they found that innovation culture and financial capability have greater influence on the process innovation. They also concluded that financial capability was important in determining the response of bank lending to the SMEs and highlighted how a stable and efficient financial sector promotes SMEs' growth.

### V. CONCLUSION/ RECOMMENDATION

This study examined the effect of innovation adoption determinants on competitive advantage in selected SMEs in Ado-Ota local government area of Ogun State. The result revealed that innovation adoption is a major driver for achieving firm's competitive advantage. The theoretical framework supported the findings of the study which is the dynamic capabilities theory. The theory focuses on the issue of competitive survival in response to rapidly changing contemporary business conditions. It explains the reason why some enterprises are able to steadily achieve competitive advantage in dynamic markets through technological capability, intrapreneurial culture, innovative culture and financial capability.

The study recommends that SMEs owners should incorporate an innovative culture and mindset to compete in the highly volatile business environment. Consequently, resources and investments should be inclined to research and development in order to meet up with current trends to enhance top-notch product or services. Government should encourage SMEs owners by providing flexible loan scheme with little or no interest attached to it.

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