POST COVID-19: TECHNOLOGY ENTREPRENEURSHIP AND INNOVATION OF GLOBAL BUSINESSES IN SOUTH – EAST, NIGERIA

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Abstract
In today's highly competitive environment, the goal of each organization is to defeat competitors and win new customers. Every crisis is an opportunity, and brings challenges and threats to entrepreneurs and their organization, no matter if initiated by human behavior, national disasters or economic mechanisms. The study is on covid-19: technology entrepreneurship and innovation on global businesses. The study was conducted to examine the impact of technology entrepreneurship and innovation on global businesses in the face of covid-19 crisis in Imo State, South East, Nigeria. Result shows that technology and Innovative activities have a significant influence on competitiveness of global businesses and that firm's innovative resources have a significant effect on global business performance in Imo State, South East, Nigeria. The study recommends that Global businesses should promote technology entrepreneurship by creating innovative activities that would lead to collaborative exploration and experimentation. The study concludes that technology entrepreneurship is perceived as a necessary for growth, differentiation, and competitive advantage at the firm, local, state and National levels.

Keywords: Entrepreneurship, Technology, Innovation, Competitiveness, Business.

Introduction

An important problem in the process of developing and increasing competitiveness of business is the level of technological innovativeness and uniqueness of products and services. The onset and spread of COVID-19 have left few people, if any, unaffected (Badzinska 2016). Government and global businesses the world over have been repeatedly tested and stretched, business have set new rules and norms to try to re-establish confidence and give economics a chance of survival (Lien, Burcu, & Raphael, 2020). At the end of December 2019, the Corona virus (Covid-19) started spreading from Wuhan, China to other countries so widely and quickly, that on 11th March 2020, World Health Organization – WHO declared Covid-19 a Pandemic (Dvoulety, Fernandez-de - Arroyabe, & Mustafa 2020). As a response to mitigate Corona virus spread and save lives, governments in affected countries imposed desperate measures of social distancing, widespread lockdown, restriction on travelling, movement, and public life had to be moved online. Entrepreneurs and global businesses at this point were no exception. They had to start moving their businesses innovatively,and temporarily, close some of their businesses as a result of government restriction, others had to run their activities in reduced extent (Dvoulety, et al 2020).

Technology entrepreneurship is a vehicle that facilitates prosperity in individuals, firms, regions, and nations. Bailetti (2012) defined technology entrepreneurship as an investment in projects that assembles and deploys specialized individuals and heterogeneous assets that are intricately related to advances in scientific and technological knowledge for the purpose of creating and capturing value for a firm. Entrepreneurship and opportunities are social construct and correlated with entrepreneurs' values, behavior cognitive capabilities, knowledge, competence, skills, and connections with entrepreneurial ecosystem and individual motivation (Galio, 1997; De-Koning, 1999; Singh, 1999, cited in Roja & Nastase 2014). Technology based entrepreneurship brings in more novelty, innovations and research and development (R&D) products on the markets.

However, if technology is involved, entrepreneurship consists in bringing important

changes into the traditional markets and new ones compared to the more traditional entrepreneurship (Roja & Nastase, 2014). Michael Porter (1990) cited in Aljohani (2015) sees innovation as the improvements in technology and better methods or ways of doing things. Contributing, Albury (2005) in Aljohani (2015) maintain that successful innovation is the creation and implementation of new processes, products, services and methods of delivery which result in significant improvements in outcomes, efficiency, effectiveness or quality. Thus, the need for this study. The study is therefore faced with challenge of examining the impact of technology entrepreneurship and innovation on global businesses in the face of covid-19 crisis in Imo state South East, Nigeria.

Statement of the Problem

Technology entrepreneurship is not about a single individual or the inventions they produce. An important problem in the process of developing and increasing competitiveness of global businesses is in the level of technological innovativeness and uniqueness of products and services. Resource based-theory tries to link firm performance to firm resources that include such concepts like capabilities, core competences, and dynamic capabilities. The problem before the study is therefore, to examine the impact of technology entrepreneurship and innovation on global businesses in a Covid-19 crisis situation in Imo state South East, Nigeria.

Objectives of the study

The objective of the study is to examine the impact of technology entrepreneurship and innovation on global businesses. Specifically, the study is to:

1. Determine if technology and innovative activities significantly influence competitiveness of global businesses in Imo State.
2. Find out if firm's innovative resources (core competences, and dynamic capabilities) significantly affects global business performance in Imo State.

Research Questions

1. To what extent does technology and innovative activities significantly influence competitiveness of global businesses in Imo State?
2. What is the effect of firm's innovative resources on global business performance in Imo State?

Research Hypotheses

1. Technology and Innovative activities have no significant influence on competitiveness of global businesses in Imo State.
2. Firm's innovative resources have no significant effect on global business performance in Imo State.

Review of Related Literature

Conceptual Review

For an entrepreneur in the field of technology, entrepreneurship is opportunity recognition with the sensing of a need or a change and ends with innovative solutions in which feature potential economy value is validated and recognized (Jolly, 1997). As global businesses innovate and creates niche market share, entrepreneur's biggest challenges are to validate and demonstrate the value of opportunity and business idea before its realization. One of the main goal of entrepreneurial approach within this era is to create and capture economic value either by developing new technologies or by exploiting them. To achieve these goals, entrepreneurs must develop strategies and business models to recreate new dimensions of socioeconomic life beginning from ideas to strategic vision (Roja & Nastase, 2014).

According to Schumpeter (1976) cited in Camagni, (1995) and Feldman, (1994), the most important function of entrepreneurs is to reform or to reinvent the pattern of value generation by exploiting inventions. The basis for the development of technological entrepreneurship is formed through interactions between Science, Technology, and Business (Poznanska, 2010). According to Nacu & Auasilcai (2014), this is a creative and innovative ability of knowledge-based business and an adaptation response to the real business environment. Consequently, all the activities of this phenomenon relate to the identification of potential entrepreneurial opportunities arising from technological developments, and the exploitation of these opportunities through the successful commercialization of innovative products (Petti 2012).

However, the process of creating technological entrepreneurship is conditioned largely by

endogenous factors of organizations, including primarily the qualifications and expertise of entrepreneurs and their ability to implement innovative solutions into business practice. Petti (2009) argue that the concept of technological entrepreneurship incorporates four main sets of activities relating to, creating new technologies or identify existing technologies, the recognition and matching of opportunities arising from the application of these technologies to emerging market needs, technology development/application, and finally, business creation. Technological entrepreneurship is a style of business leadership according to Dorf & Byers (2005) that involves identification and human resource high-potential capitalization, technology-intensive commercial opportunities, managing accelerated growth and significant risk taking.

Technology entrepreneurship is about collaborative production decisions, not about a single individual making or delegating decisions, but involves specialized human-resources, tapping into their skills and ability to collaboratively explore and exploit scientific and technological changes to benefit the firm (Bailetti, 2012). Technology entrepreneurship according to Garud & Karnoe (2003) in Bailetti (2012) is better expressed as the joint-production phenomenon that draws from a team of specialized individuals from multiple domains, some or all of whom become embedded in the technology path the try to shape in real time. Similarly, Lindenberg & Foss (2011) posit that technology entrepreneurship is not about a single individual or the inventions they introduce, rather it is about managing joint exploration, where each entrepreneur's roles and responsibilities collaboratively and cooperatively work towards achieving desired goals.

Innovation is the specific tool of entrepreneurs by which they exploit change as an opportunity for a different business or service. Innovation is crucial for value creation, growth and employment. Innovation as a concept was first highlighted within academia at the beginning of the 20th century by Joseph Alois Schumpeter, who maintained that innovation is a process that takes an invention and develops all the way to a marketable product and service that changes the economy. Zizlavsky (2011) expressed innovation as product, process and organizational changes that do not necessarily originate from new scientific discoveries. An activity which leads to new producing function, and new product.

Theoretical Review

Theory of the Firm

Linking technology entrepreneurship to the theory of the firm: Technology entrepreneurship domain and the theory of the firm are interdependent through the specialized individuals and heterogeneous assets committed to a project for the purpose of creating and retaining value for the firm. In the theory of firm, the specialized individual (entrepreneurs) and the heterogeneous assets (economic resources) in the project's stock of resources are considered the reference points. The essence of the theory is to explain why firms exist, what determines their boundaries, what determines their structure and what drives their different actions and performances. The owners of firm's and entrepreneurs according to the theory have no way of knowing or predicting the relevant attributes of all the economic resources.

Technological entrepreneurship at point, identifies, selects and develops new attributes for the purpose of creating and capturing value for the firm. Foss, Klein, & Bylund (2011) posit that technology entrepreneurship requires a firm for two main reasons; firm control of economic resources that specialized individuals use to experiment with new combinations of economic resources and their attributes, and secondly, the requisite joint investment and production decisions that cannot be purchased in the market.

Theory of Sustainable Competitive Advantage: Resource-Based View

Linking technology entrepreneurship to the theory of sustainable competitive Advantage: Technology entrepreneurship and the Resource-based view are independent because they are both concerned with how to create and capture value and thus applies to firms that are continuously successful, and also to any firm with projects that rely on advances of science and technology. Resource-based theory links firm performance to firm resources that includes such concepts like capabilities, core competences, and dynamic capabilities. Peteraf & Barney (2003) cited in Bailetti (2012) posit that scholars working in this field seek to clarify how a firm create and capture more value than its competitors on a sustained basis.

Contributing to the resource-based theory literature, Lepak & Smith (2007) maintain that, for value-creation activities to endure over the long term, the amount customers pay the firm must be greater than the firm's cost of production, and a function of the difference between the satisfaction customers receive from consuming the firm's goods or services and the satisfaction customers would receive from consuming the closet alternative goods or services. For the firm to capture the value it creates and exchange value, innovative attitude in both creation and exchange should be similar.

Methodology

The study adopted a cross sectional research design, with a population made up of 1425 employees of Coca Cola PLC Owerri. A sample size of 310 was determined using the simple random sampling technique. Data generated were analyzed using the Ordinary least square (OLS) with the aid of SPSS version 18.

	Description	**No of Respondents**			
		Yes	**%**	**No**	**%**
1	Does technology activities influence competitiveness of global businesses.	256	83	54	*17*
2	Does firm's core capabilities affect global firms operations.	247	80	63	20
3	Does innovative resources have significant effect on entrepreneurship of global firms operations.	240	77	70	23
4	Does innovation lead to effective business performance.	254	82	56	18
5	Does effective and efficient competitiveness lead to better global business performance.	256	83	54	17
6	Does innovation in entrepreneurship enhances global business competitiveness and performance.	246	79	64	21

Source: Field data 2022

Results

In question 1, result showed that 256 responses representing 83% of the total respondents for the study said Yes or assert that technology activities influences competitiveness of global businesses in Nigeria while 54 responses representing 17% of the total respondents for study said No which indicates that technology activities do not influence the competitiveness of global businesses in Nigeria. From the findings, it can be deduced that technology activities influence the competitiveness of global businesses in Nigeria.

In question 2, it is clear that 247 response representing 80% of the total respondents for the study said Yes that firm's core capabilities affects global firm's operations in Nigeria, while 63 responses representing 205 of the total respondents for the study said No, that firm's core capabilities does not affects global firm's operations in Nigeria.

In question 3, it is clear that 240 responses representing 77% of the total respondents from the study said Yes that innovative resources have significant effect on entrepreneurship of global firm's operations., while 70 responses representing only 23% of the total respondents said No that innovative resources have no significant effect on entrepreneurship of global firm's operations in Nigeria.

In question 4, the result shows that 254 responses representing 82% of the total respondents for the study assert that innovation lead to effective business performance in Nigeria, while 56 responses representing only 18% of the respondents of the study said no that innovation lead to effective business performance in Nigeria.

In question 5, finding shows that 256 responses representing 83% of the total respondents for the study said that effective and efficient competitiveness lead to better global business performance in Nigeria, while 54 responses representing only 17% of the total respondents for the study said no that effective and efficient competitiveness do not lead to better global business performance in Nigeria. Therefore, it can be affirmed that effective and efficient competitiveness leads to better global business performance in Nigeria.

Finally, in question 6, results showed that 246 responses representing 79% of the total respondents of the study said yes that innovation in entrepreneurship enhances global business competitiveness and performance, while 64 responses representing only 21% of the total respondents for the study said no that innovation in entrepreneurship enhances global business competitiveness and performance. From the findings, it can be affirmed from the majority view that innovation in entrepreneurship enhances global business competitiveness and performance.

Test of Hypotheses

Decision Rule: Reject H_0: $t_{cal} > t_{obs}$ at 0.05 confidence level

Accept H_0: $tcal < t_{obs}$

Hypothesis .1

H_{01}: Technology and Innovative activities have no significant influence on competitiveness of global businesses in South East Nigeria.

$Y = f(x)$……. Model 1

$Y = b_0 + b_1x + u_1$

Regression result of the relationship between technology and innovative activities and global businesses.

Dependent variable: Y

Method: Ordinary least square (OLS)

Sample: 1-10

No of observation: 10

Variable	Coefficient	Std. Error	t- Statistic	Prob.
C	12.081	5.447	2.218	0.057
X	2.504	0.803	3.117	0.014

Source: SPSS, 18

$r^2 = 0.548$

$r = 0.741$

Durbin Watson = 2.96

The coefficient of the constant term is 12.08. The associated sign is positive, implying at zero influence of the independent variable, Global Business Performance (Y) will be influence positively by 12% approximately. The regression coefficient of technology and Innovative activities (X_1) carries positive sign and the t-value (3.117) is statistically significant at 5%. The significance is ascertained as the 0.05 level of significance is greater than p-value of the regression coefficient of (X_1) (0.014). The computed coefficient of determination ($r^2 = 0.548$) shows that 54.8% of the total influence of Global Business Performance (Y) is accounted for, by the independent variable - technology and Innovative activities, while 45.2% of the total impact in Y is attributed to the influence of other factors that are not included in the regression function. However, the computed correlation coefficient r is 0.741, implying that there is strong positive relationship between technology and Innovative activities 'X_1' and Global Business Performance 'Y'. The influence of Durbin Watson (DW) is 2.96, at 5% level of significance, and $K^1 = 1$ and $N = 10$ degree of freedom, the tabulated lower (dL) and upper units of Durbin Watson statistics (2.96) is greater than the upper limit (1.320), thus, there is no evidence of autocorrelation in the model.

Hypothesis .2

H_{02}: Firm's innovative resources have no significant effect on global business performance in South East, Nigeria.

Regression result of in Firm's innovative resources have no significant effect on global business performance in South East, Nigeria.

Table.2

$Y = f(x)$……. model 2

$Y = b_0 + b_1x + u_1$

Dependent variable: Y
Method : Ordinary least square (OLS)
Sample : 1-10
No of observations : 10

Variable	Coefficient	Std Error t	t-statistic	Prob.
C	7.188	4.008	1.793	0.111
X	3.252	0.595	5.467	0.001

Source: SPSS, version 18
r^2 = 0.789
r = 0.888
Durbin Watson = 1.65

The coefficient of the constant term is 7.188. The associated sign is positive, implying at zero effect of the independent variable, Global Business Performance (Y) will increase effect by 7% approximately. The regression coefficient of firm's innovative resources (X_2) carries a positive sign and the t-value (5.467) is statistically significant at 5%. The significance is ascertained as the 5% level of significance is greater than the p-value of the regression coefficient of firm's innovative resources (X_2) (0.001), the computed coefficient of determination (r^2 = 0.789) shows that 78.9% of the total variation in Global Business Performance (Y) is accounted for, by the independent variable - firm's innovative resources X_2 , while 21.1% of the total variation in Y is attributed to the influence of other factors that are not included in the regression function. However, the computed correlation coefficient (r) is 0.888, implying that there is a strong positive relationship between firm's innovative resources (X_2) and Global Business Performance (Y). The value of Durbin Watson (DW) is 1.65. Using 5% level of significance and K^1 = 1 and N =10 degree of freedom, the tabulated lower (dL) and upper limits (1.320), there is no evidence of autocorrelation in the model.

Discussion of Findings
It is found that the t-calculated value of X in the first model is 3.117 while the t-tabulated value is 2.306. since the t-calculated (3.117) is greater than the t-tabulated value (2.306), H_0 is rejected and the study conclude that technology and Innovative activities have a significant influence on competitiveness of global businesses in South East, Nigeria.
Using a two-tailed test, the t-calculated value in the second model is 2.306, therefore, H_0 is rejected and the study conclude that Firm's innovative resources have a significant effect on global business performance in South East, Nigeria.

Recommendations
i. Businesses should create technological and innovative environments that could draw specialized individuals and heterogeneous assets together in order to create and capture values for the firm.
ii. Government also should promote entrepreneurship education in schools to encourage skills acquisition in schools.
iii. Global businesses should promote technology entrepreneurship by creating innovative activities that would lead to collaborative exploration and experimentation.

Conclusion
Technology entrepreneurship is perceived as a necessary for growth, differentiation, and competitive advantage at the firm, local, state and National levels. The primary purpose of technology entrepreneurship and innovation is to assemble a combination of specialized individuals and heterogeneous assets in order to create and capture values for the firm through collaborative exploration and experimentation.

The two hypotheses of the study were tested using Pearson product moment correlation coefficient (r) at 0.05 level of significance with the aid of SPSS version 18. The study however, concluded that technology and Innovative activities have a significant influence on competitiveness of global businesses and that firm's innovative resources have a significant effect on global business performance in South East, in Nigeria.

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