Disruptive Technology and Entrepreneurship Innovation in Emerging Economies: The Nigerian Experience

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ABSTRACT

Technology has, in the last two decades in particular, witnessed rapid advancement, with ground-breaking and disruptive innovations which continue to challenge and transform the 'traditional' ways of doing things. This study explored the nexus between disruptive technology and entrepreneurship innovation in emerging economies using Nigeria as a case study. The classical ordinary least squares regression technique was used for data analysis. It was revealed from the findings that new market disruption has a significant positive impact on entrepreneurship innovation in Calabar Metropolis of Cross River State, while the low-end disruption has no significant effect on entrepreneurship innovation. It was recommended that new market disruptive innovation should be design in such a way that entrepreneurial innovation will be radically oriented rather than incremental in nature so as to apply to product, service and business-model opportunities in used by entrepreneurs. Low-end disruptive innovation should be model by management of firms to target overshot customers with lower-cost business models. Government should implement policies that have an overwhelming influence in shaping the opportunities that entrepreneur's target. Regulation created to respect the forces of innovation can create an environment ripe for yielding disruptive change. With the advent of innovation, entrepreneurs must partner with upcoming innovations so as to explore the technological and growth opportunities therefrom and give customers better and more innovative product offerings. Entrepreneurs and other business owners should employ the use of new technology as this enhances productivity and reduces the cost of production.

Keywords: *Disruptive technology, Entrepreneurship, Entrepreneurship innovation, Emerging economies, Nigeria*

INTRODUCTION

The application of technology for the growth of business in the 21st century cannot be overstressed. Hence, the attainment of growth and a prime market position in the 21st century business landscape demands a well-articulated and religiously executed strategy, which often requires the institutionalization of the right technology, culture, engaged customer base,

necessary alliances and the best people. These factors create an environment that stimulates innovation – which is crucial for enterprise survival. Innovation means creating value from ideas. This value could be commercial value or social value, depending on the context and purpose; from multi-million-naira 5Gpowered microchip, to environmentally friendly cars. In business, innovation often results when ideas are applied by an organization to satisfy the needs and expectations of the customers. The constantly changing consumer preferences and consumption behaviours have created a "new era of innovation", in which organizations must either innovate or die. This has altered the dynamics across virtually every business sector and will shape business models for decades to come. Putting figures to this, a 2017 PwC survey reports that 60 percent of 1,379 chief executives believed their sectors have been changed or reshaped, whilst 75 percent expects to see their market disrupted by the year 2022. Entrepreneurs that desire to win in the future must be prepared to re-shape their business trajectory through technological innovation. Technology has invoked a new era of innovation. Advancements in computing, Artificial Intelligence, Machine Learning and analytics have led to quantum leap in robotics, analytics, genomics and nanotechnology, spurring innovation in industries like energy, manufacturing, medicine and financial services. The world is witnessing the Fourth Industrial Revolution driven by advancement in computing, machine learning and analytics (Ayodotun *et al.*, 2021).

In the telecommunication services sector for instance, firms leverage digitally to compete on the nature of innovation that can provide real-time solutions, handle and predict customer behaviour in an incredible fast manner, and deliver best customer experience. This is just the beginning as technology continues to redefine possibilities in businesses. The possibilities of billions of people connected by mobile devices, with unprecedented processing power, storage capacity, and access to knowledge, are unlimited, and these possibilities will be multiplied by emerging technology breakthroughs in fields such as artificial intelligence, robotics, the Internet of Things, autonomous vehicles, 3-D printing, nanotechnology, biotechnology, materials science, energy storage, and quantum computing (Wigwe, 2021; Ayodotun *et al.* 2021).

For entrepreneurs, the acceleration of innovation and the velocity of disruption in technology is taking wide swipe on virtually all value chains, yielding long-term gains on how businesses are managed and sustained. Clearly, the technologies that underpin the Fourth Industrial Revolution are having a major impact on ways of serving existing needs on the supply side, as entrepreneurs now have access to global digital platforms for research, development, marketing, sales, and distribution of their products and by-products. On the demand side, the abundance of information, transparency, consumer engagement, and new patterns of consumer behaviour compel entrepreneurs to adapt the way they design, market, and deliver products and services. A key takeaway for entrepreneurs is that the emergence of global platforms and other new business models means that talent, culture, and organizational forms will have to be rethought. Hence, entrepreneurs must deliberately, relentlessly and continuously innovate through the wholistic embrace of new technologies.

Technology has, in the last two decades in particular, witnessed rapid advancement, with ground-breaking and disruptive innovations which continue to challenge and transform the 'traditional' ways of doing things by business owners and entrepreneurs. This development underscores the concept of disruptive technology (Olorundare et al., 2017). The new technologies have made life generally more convenient, easier, cheaper, timely and faster, but often come with resultant risks and consequences such as loss of jobs, reduced revenue and/or

annihilation of the affected industries and companies, and hence retard entrepreneurs who are resistant to change. They also come with certain positives however, such as opening up new business opportunities particularly in services (Iyanda, 2016). The main objective of this study is to establish the nexus between disruptive technology and entrepreneurship innovation in Nigeria, using Calabar Metropolis as a case study.

REVIEW OF RELATED LITERATURE

2.1 Conceptual Issues

2.1.1 Disruptive Technology

A disruptive technology is one that displaces an established technology and shakes up the industry or a ground-breaking product that creates a completely new industry. In business theory, a disruptive innovation is an innovation that creates a new market and value network and eventually disrupts an existing market and value network, displacing established market- leading firms, products, and alliances. Any technology that dislodges an established technology by creating a completely new industry is disruptive. Disruptive technology creates new market and reshapes existing ones thereby giving customers and end users the greatest level of access, empowerment, convenience, choice and value. The focal point of disruptive technology is to challenge established business models and radically transform products and services (Evans, 2017). The term "Disruptive Technology", was first introduced by Joseph Bower (Harvard Professor) and Clayton Christensen (a businessman), in 1995 in their article titled-Disruptive Technologies: Catching the Wave. They defined "Disruptive Technologies" as technologies that depart fundamentally from existing ones, usually by being less complicated, more accessible, and less expensive. They explained that one of the most consistent patterns in business is the failure of leading companies to stay at the top of their industries when technologies or markets change. In order to remain at the top therefore, they must look beyond satisfying small or emerging markets and focus on new technologies that meet the functional demands of mainstream customers (Cheeseman *et al.*, 2020).

The concept was further espoused by Clayton Christensen in his book The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail, published in 1997. The book demonstrates how successful, outstanding companies can do everything "right" and still lose their market leadership or even fail, as new, often unexpected competitors rise and take over the market (Christensen, 1997). Clayton categorized new technology into two: sustaining and disruptive. Sustaining technology relies on incremental improvements to an already established technology, whilst disruptive technology lacks refinement, often has performance problems because it is new, appeals to a limited audience and may not yet have a proven practical application. (Brand Genetics, 2013) explained that large corporations are designed to work with sustaining technologies for a number of reasons: they know their market; stay close to their customers; and have a mechanism in place to develop existing technology. Conversely however, they have trouble capitalizing on the potential efficiencies, cost-savings, or new marketing opportunities created by low-margin disruptive technologies.

2.1.2 Innovation and its Disruptive Characteristics

Disruptive innovation has been established as a powerful way of thinking about innovation-driven growth for entrepreneurs, business executives and value-driven organizations. An innovation becomes disruptive when it displaces established market leaders. According to Clayton Christensen "Disruptive Innovation describes a process by which a product or service initially takes root in simple applications at the bottom of a market-typically by being less expensive and more accessible and then relentlessly moves upmarket, eventually displacing established competitors." Disruptive innovations are not breakthrough technologies that make good products better; rather they are innovations that make products and services more accessible and affordable, thereby making them available to a larger population. Thus, disruption occurs when disruptors deliver the performance that incumbents' customers require, while enjoying the advantages they got from their initial success. An innovation is not disruptive until the product or service is purchased in volume by the upmarket thus changing the taste and system of the existing market. It should be noted that disruptive innovation is not only for new entrants; an established firm can also be a disruptor through reaffirming its position as a market leader in its market through innovation. Examples of disruptions witnessed in the last three decades are Netflix, Airbnb and arguably Uber; which have fundamentally disrupted the market dynamics of video streaming, hospitality and transportation sectors respectively. Netflix was launched on April 14, 1998, as the world's first online DVD rental store, but today it currently serves over 145 million streaming subscribers around the globe, with a gross revenue of US$15.794 billion (2021). Airbnb, in 2008, started as a website that offered short-term living quarters, breakfast, and a unique business networking opportunity for city dwellers/visitors, but today serves a worldwide market, with revenues at $2.6 billion (www.accessbankplc.com, 2017). Uber's disruptive technology has placed the 10-year-old company in nearly 600 cities worldwide, and with a valuation of nearly $70 billion. These are few examples of how much disruptive innovation can lead to entrepreneurial growth and economic value (Wigwe, 2021).

Innovation and disruption impact on entrepreneurial growth and business performance in Nigeria in many ways. Disruptive innovation creates new goods and services; and increases accessibility and affordability of value for a much larger population. Business leaders and entrepreneurs must know that as they position for the inevitability of the Fourth Industrial Revolution, the riskiest and most dangerous thing to do as an entrepreneur is to resist the need to innovate. Indeed, the various challenges confronting entrepreneurs today-from infrastructure, to healthcare, education, logistics amongst others are clear invitation to innovation and disruption, which is clearly inevitable, and could happen in unprecedented manner. For entrepreneurs, the acceleration of innovation and the velocity of disruption is taking wide swipe on virtually all value chains, yielding long-term gains in efficiency and productivity.

2.1.3 Application of Disruptive technology for entrepreneurship innovations

In Nigeria and elsewhere, businesses and entrepreneurs must deal with many factors to make the most from innovation and disruption. These factors include competition, intellectual property rights, costs of doing business and ICT security.

Competition: Businesses and organizations must accept the reality of changing competitiveness frontiers and compete healthy and ethically in the best interest of all. New technologies and business models will arise that will profoundly affect the functioning of existing industries.

Whilst entrepreneurs must protect and grow their individual market share, they must ensure that they compete on the frontiers of technology, efficiency, customer experience and value. The authorities must also position to redefine and guide all players using best competition advocacy.

Intellectual property rights: Nigeria must very urgently deal with the challenges of intellectual property protection to maximize the growth potential of innovation. All stakeholders must collaborate and push for reforms of the legal frameworks for protecting intellectual property rights in Nigeria. Without this, it will be tough harnessing talents and inventions for entrepreneurial innovations.

Costs of doing business: The country must deal with the high cost of doing business-from poor infrastructure, business registration hurdles, multiple taxation, bureaucratic bottlenecks, amongst others. Nigeria ranks 146 amongst 190 economies in the 2019 World Bank's ease of doing business ranking. The country must do more to encourage start-ups and established businesses to run profitably.

IT Security: Information security and the challenges of protecting customer's information online against cyber-attack remain a major threat that could erode customer's confidence. Entrepreneurs must invest in preventing unauthorized access, use, disclosure, disruption, modification, inspection, recording or destruction of information or data, in all forms (Wigwe, 2021; Eboh & Odey, 2014).

2.1.4 Entrepreneurship Innovation

Entrepreneurship is the development of new relics at the product and firm level that substitutes long-standing with novel value through entrepreneurial action under circumstances of indecision and change, which applies to product, service and business-model prospects (McKelvey, 2004). Innovation is a precise purpose of entrepreneurship; hence defensible entrepreneurship centers on making product and services perform better in a way that customers in the mainstream market already value and address the next generation needs in existing market. Entrepreneurial activity can only be labeled supportable, and therefore satisfy workable expansion, if there is an equal coming together of the people involved in the business value-chain, within the business creativity (Okeke *et. al.*, 2019).

Predicated on the Schumpeterian 'creative destruction' disruptive innovation falls directly within the context of entrepreneurship study. Nevertheless, there is scarcity of investigation in this field that assumes an entrepreneurial view point. There are at least three significant components from entrepreneurship investigation that are not well agreed in the context of disruptive innovation: (1) the sources of opportunity (2) uncertainty in entrepreneurial action and (3) entrepreneurial logic. Entrepreneurial opportunity as a form of disruptive innovation can be term as radical rather than incremental in nature (Shane & Venkataraman, 2000; Eckhardt & Shane, 2003). This relates to product, service, while present-day investigation into disruptive innovation has made a difference between disruptive and sustaining innovation, a significant question has remained unreciprocated: the question of where an opening comes from, i.e., the cradles of entrepreneurial opportunity. Uncertainty is a vital constituent of the entrepreneurial theory of action (McMullen & Shepherd, 2006). Entrepreneurship investigation marks a difference between 'risk', which is predictable and comprehensible, and 'Knightian uncertainty' (or true uncertainty), which is unpredictable and incomprehensible (Miller, 2007).

Questions arise as to what type of uncertainty is connected with disruptive innovation opportunity and how entrepreneurs, either new entrant, recognize and deal with uncertainty. Understanding the nature of uncertainty is critical since each type wants dissimilar types of entrepreneurial achievement. Dealing with Knightian improbability using approaches that are more suitable for risky circumstances may lead to extraordinary problems, and vice versa. The third element infrequently stated in the current theory of disruptive innovation is decision-making logic: causal versus efficacious and how this links to the view of product and market survival (Sarasvathy, 2001). Christensen's (2006) statement-'maybe there is something about good management that sows the seeds of subsequent failure'-could be a reproduction of the parameters of the logic-in-use that hampers large incumbents' capability to deal with uncertainty created by new, small entrants: Which logic is to be used re-counts to the awareness and thoughtful of the nature of uncertainty (Okeke et. Al, 2019).

2.2 Theoretical Underpinning

This study is anchored on Disruptive Innovation Theory (DIT) by Joseph Bower (Harvard Professor) and Clayton Christensen (a businessman), in 1995. In their article titled-Disruptive Technologies: Catching the Wave. They defined "Disruptive Technologies" as technologies that depart fundamentally from existing ones, usually by being less complicated, more accessible, and less expensive. They explained that one of the most consistent patterns in business is the failure of entrepreneurs to stay at the top of their industries when technologies or markets change. In order to remain at the top therefore, they must look beyond satisfying small or emerging markets and focus on new technologies that meet the functional demands of mainstream customers (Cheeseman *et al.,* 2020). Disruptive innovations change the demand and needs of a prevailing market and as a result disrupt a prevailing technical route (competence-destroying) while sustaining innovations upgrade and improve it (competence-enhancing). The source of disruption can be a technological disjointedness, a commercial disjointedness, or both, resulting in significant enhancements in product presentation or price tag (Leifer *et al.,* 2001). As encapsulated in the models, disruptive innovations either offer more accessible or lower prices to customers at the low end of a prevailing market (i.e., low-end disruptions) or create new markets by conveying new structures to non-customers (i.e., new-market disruptions). Low-end disruptions mark overran customers with lower-cost business prototypes. They are humbler and cheaper but lower-performing at first, thus promising lower profit margins. The reasoning behind their appearance is that by over-satisfying customers' needs in hopes of higher margins; large occupants create a space at lower price points permitting competitors with disruptive technologies to develop (Christensen & Raynor, 2003). New-market disruptions which mark non-consumption are ground-breaking. In both types of disruptions, the common denominator is that entrants are not competing with large occupants and do not therefore apparently position an instant peril to them (Akinsola, 2021).

2.3 Empirical Studies

On the empirical front, several studies abound on the relationship between disruptive innovation and business performance, growth and survival but there is little known on the nexus between entrepreneurship innovation and disruptive technology in the telecommunication sector.

Hatak, Kautonen, Fink and Kansikas (2016) analyzed how the interplay between innovativeness as a business specific resource and family commitment as a family-specific

resource affects performance. The analysis of longitudinal survey data collected from Finnish family business demonstrates a curvilinear (U-shaped) moderating effect of the owner family's commitment to the firm, in that the impact of innovativeness on firm performance is strongest when family commitment is either low or high.

Weng, Chen and Chen (2015) examined the influence of a number of factors on green innovation and the consequences in terms of performance. An empirical survey was conducted of 202 Taiwanese service and manufacturing companies. The survey found that pressure from competitors and the government, along with employee conduct, all had significant and positive effects on green innovation practices. Also, a moderating effect of innovation orientation existed only in the relationship between green product innovation practices and employee conduct.

Lin and Wu (2018) investigated the impact of existing knowledge assets on disruptive innovation by analyzing the role of knowledge embeddedness and specificity. They conducted a hierarchical regression analysis using survey data from 173 Chinese industrial firms to test the direct and indirect effects of knowledge embeddedness and specificity on disruptive innovation, which can be divided into outward-oriented and internal-oriented disruptive innovation. The results indicated that knowledge embeddedness not only played a positive role in knowledge specificity, but also had a positive effect on outward oriented disruptive innovation.

Adebosin et al. (2019) examined disruptive innovation and the performance of family business in Ogun State. Descriptive research designed was employed and primary data collected using the questionnaire was utilized. Analysis of variance (ANOVA) regression estimated through SPSS was used for analysis. The result showed that disruptive innovation does not have a significant effect on performance of family business. It was also found that family business culture and qualification do not have a significant independent and joint effect on performance of family business in Ogun State. Therefore, disruptive innovation does not show any effect on the performance of family business.

Oluyemi, Ayodele and Ugbede (2019) examined the determinants of financing options among micro-entrepreneurs in informal settings within the University of Lagos, Nigeria, using multiple regression analysis. Findings revealed that credit history and assets-based financing are significant determinants of formal financing options among young micro-entrepreneurs in informal settings; gender and network capability are significant determinants of informal financing options among young micro-entrepreneurs in informal settings and awareness is significant of both formal and informal financing options among young micro-entrepreneurs in informal settings.

Okeke, Nwokorie and Ekwochi (2019) examined disruptive innovation and sustainable entrepreneurship in selected telecommunication industries in south east Nigeria. The hypotheses were tested using inferential statistical technique such as Regression Analysis and Pearson's Product Correlation Analysis. The study revealed that there is a significant positive effect on new market disruptions on sustainable entrepreneurship opportunities and there is a significant positive effect on low- end disruptions on uncertainty in sustainable entrepreneurship action.

Hinmikaiye et al. (2021) examined disruptive technology and the Nigerian regulatory response. The study surveyed existing literature to situate the study within the context of existing evidence. The study concludes with a call for more regulatory activity to balance the competing interests in the society, yet focusing on the benefits such disruptions herald.

Ayodotun et al. (2021) investigated the linkages between disruptive innovation and sustainable entrepreneurship within the context of small and medium firms. By adopting a systematic review of the literature, they thematized the possible connections between disruptive innovation and sustainable entrepreneurship. Among the viable arguments of the study is that disruptive efforts should align with financial expectations and social value, and other expected returns for the customers. The study extends the theoretical frontiers of the disruptive innovation and sustainable entrepreneurship literature by demonstrating their interconnectedness.

From the empirical findings of the foregoing studies, it can be observed that there is no specific work on the nexus between disruptive technology and entrepreneurship innovation in Nigeria. Hence, this study is poised to fill the gaps in the literature.

METHODOLOGY

3.1 Research Design

To determine the nexus between disruptive technology and entrepreneurship innovation in Nigeria, using Calabar Metropolis the survey research design was adopted. The choice of the design was influenced by the nature of the study which was both descriptive and analytical. Also, the geographical area of the study was well defined and the respondents who possess the required information were clearly identified which enabled the use of survey tools so as to gather data for the study in order to establish cause-effect relationship between the independent and the dependent variables. Qualitative data were collected through a structured questionnaire distributed to 250 conveniently sampled telecommunication entrepreneurs in the Calabar Metropolis. The questionnaire made use of Likert-like scale having five response categories weighted as very great extent (5) great extent (4) some extent (3) little extent (2) and very little extent (1).

Taro Yamane formula is used to select the sample size. It is important to use Taro Yamane formula to avoid bias. The Taro's formula is expressed thus:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = sample size
N = population size
e = tolerable error (0.05)
1 = constant

Substituting the values in the above formula we have:

$250/1+250\ (0.05)^2$
$= 250/1+250\ (0.0025)$
$=250/1+0.625$
$=250/1.625$
$= 153.8461$
=154

In applying the Taro Yamane formula on the population of the study, the total sample size that best represents the population of the study was 154. Data collected were presented in

frequency tables. A simple linear regression statistical tool of Ordinary Least Squares was used to test the models.

3.2 Model specification

This study adopts the model of Okeke et al. (2019) with modifications and application to Calabar Metropolis which is in the South-South region of Nigeria. The models bear the parameters in which the dependent and independent variables are specified. Thus, the models are stated below:

Model I

$$ENTINO = f(NMDRT) \quad 3.1$$

The linear model in equation (3.1) is transformed as follows:

$$ENTINO = \psi_0 + \psi_1 NMDRT + Vt \quad 3.2$$

Model II

$$ENTINO = f(LEDRT) \quad 3.3$$

The linear model in equation (3.3) is transformed as follows:

$$ENTINO = \alpha_0 + \alpha_1 LEDRT + Vt \quad 3.4$$

Where:

ENTINO= Entrepreneurship innovation, NMDRT = New market disruption, LEDRT = Low-end disruption, ψ_0 and α_0 = constant terms and V_t = error term. Data analysis was undertaken using qualitative as well as quantitative techniques. Descriptive statistics such as frequencies, percentages etc. was employed in most of the analyses in summarizing trends, changes and comparison across certain characteristics. The study also made use of tables for presentation as appropriate. The data collected was analyzed with relevant statistical tool such as the ordinary least squares (OLS) technique of simple regression models applying the Statistical Package for Social Science (SPSS, 22).

ANALYSIS AND DISCUSSION OF RESULTS

Data presentation and analysis

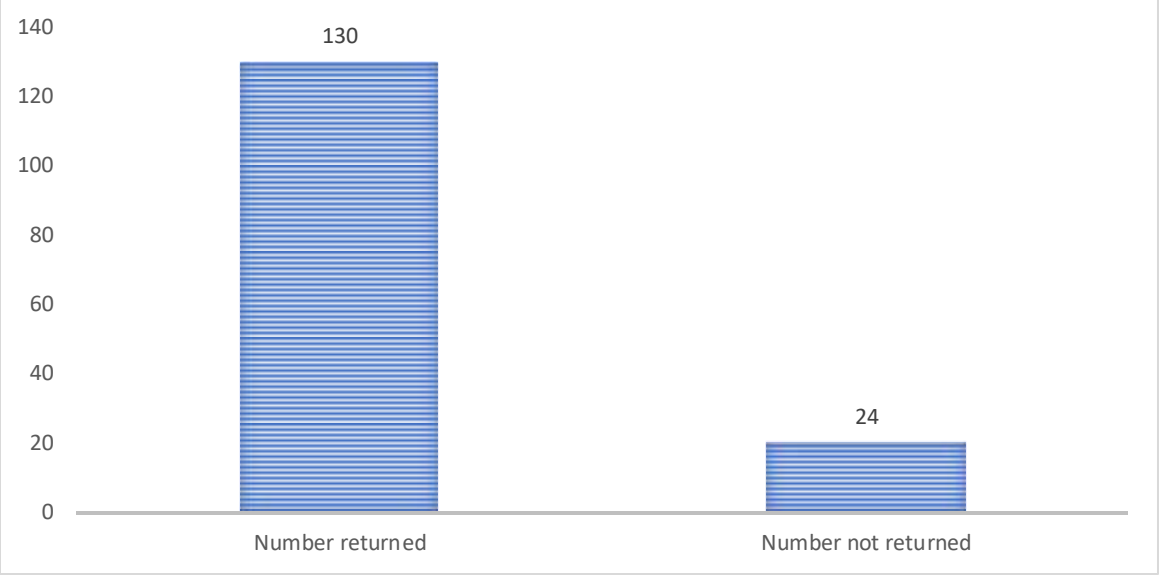
The table presented below contains the analytical details relating to the findings from the respondents. Of the 154 questionnaires distributed to the respondents in the Calabar Metropolis of Cross River State, 130 copies representing 84.4 per cent were correctly filled and returned to the researchers, while 24 copies of the questionnaire representing 15.6 per cent were not returned by the respondents to the researchers. However, from the above analysis, the 130 was considered to be the workable sample size used in the data analysis and was the true representation of the study population.

4.1. Presentation and analysis of demographic data

TABLE 4.1: **Distribution of questionnaire**

Questionnaire	Respondents	Percentage
Number returned	130	84.4
Number not returned	24	15.6
Total	**154**	**100**

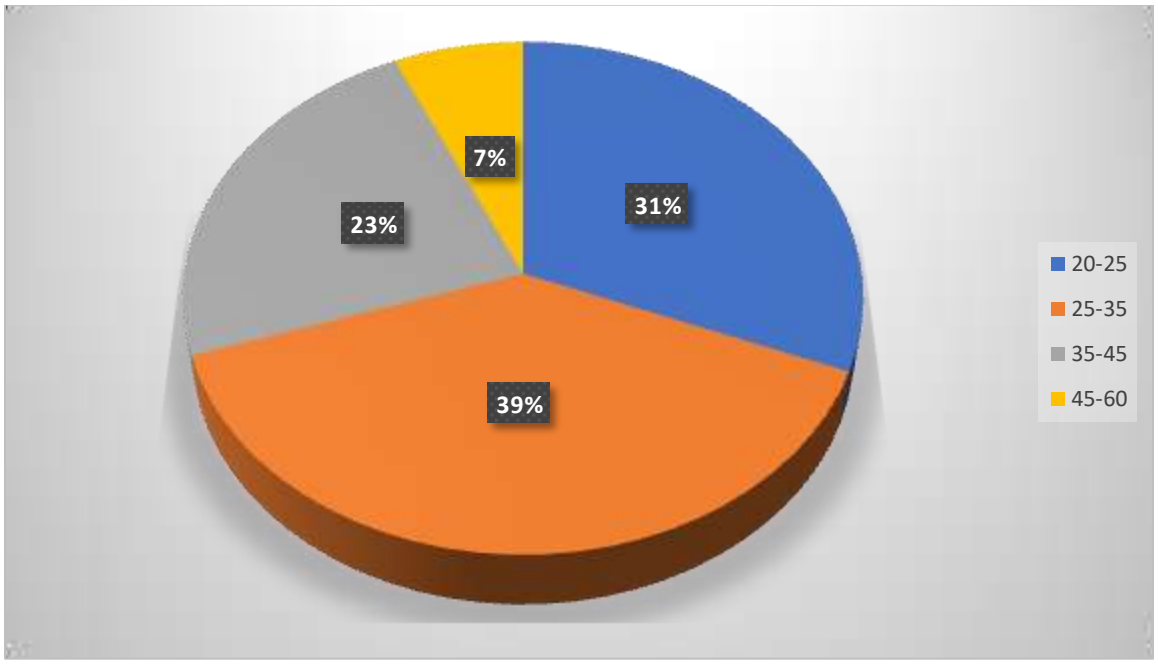
Source: Field survey, 2022



Graph 4.1: Graphical representation of questionnaire
Source: Field Survey, 2022.

TABLE 4.2: **Distribution of respondent by age**

Age	Respondents	Percentage
20-25	40	30.8
25-35	50	38.5
35-45	30	23.1
45-60	10	6.7
Total	**130**	**100**

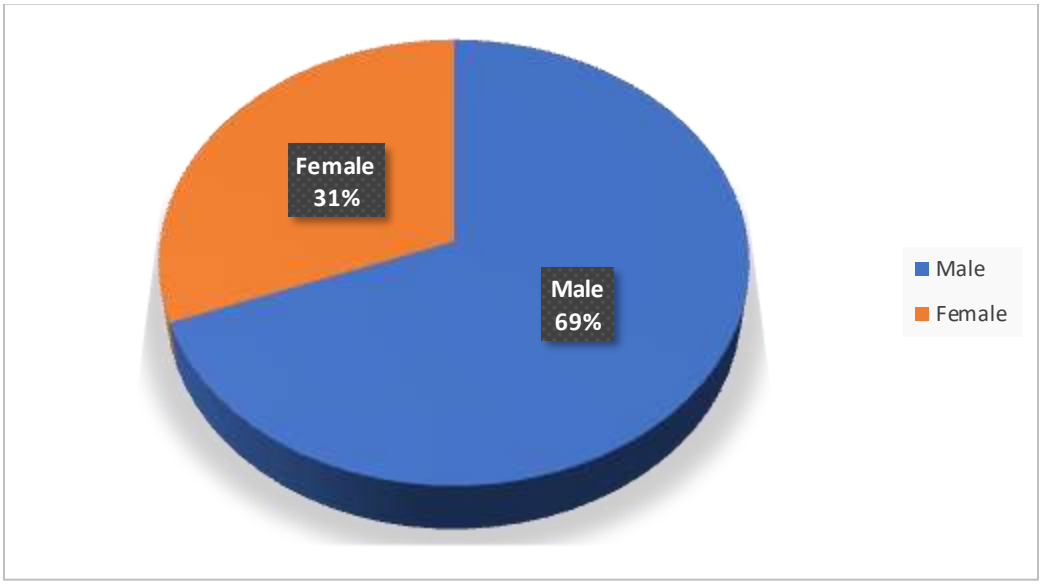


Graph 4.2: Graphical representation of age distribution of respondents
Source: Field Survey, 2022.

With respect to age of the respondents, table 4.2 and graph 4.2 shows that 40 respondents, representing 31 percent were between 20-25 years, 50 respondents representing 39 percent were between 26-35years, 30 respondents representing 23 percent were between 36-45 years, while 10 respondents representing 7 percent were 46 years and above. Hence, most of the respondents falls within 26-35years age bracket.

TABLE 4.3: **Distribution of respondents by sex**

Sex	**Respondents**	**Percentage**
Male	90	69.2
Female	40	30.8
Total	**130**	**100**

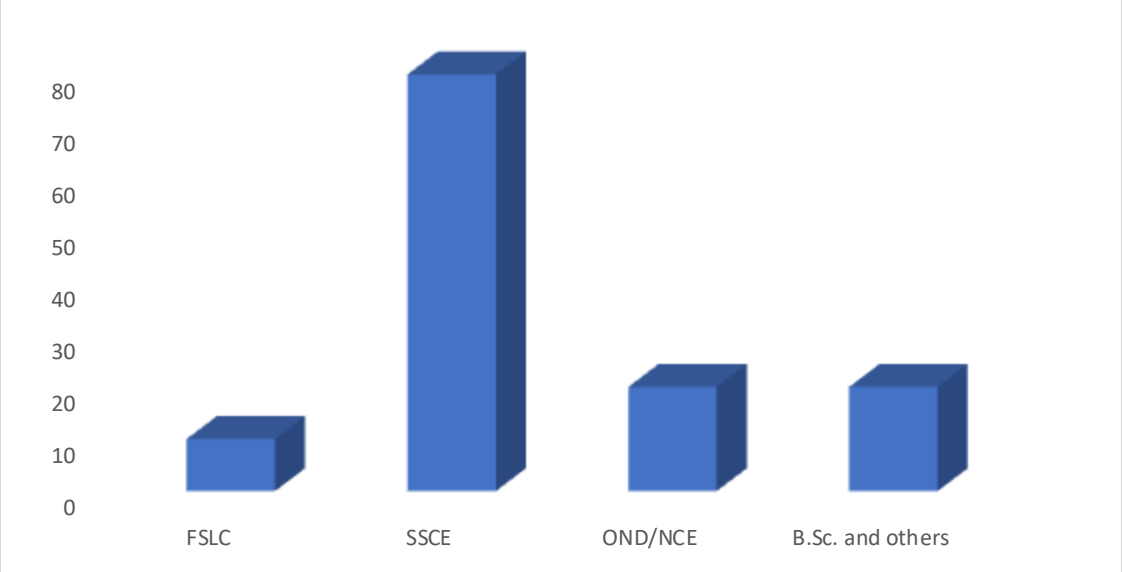


Graph 4.3 Graphical representation of gender
Source: Field Survey, 2022.

Table 4.3 and graph 4.3 shows the gender of the respondents. Of the one hundred and thirty respondents, 90 respondents representing 69 percent were male, while 40 respondents representing 31 percent were female. The implication of this is that most of the respondents were male.

TABLE 4.4: **Educational Qualification of Respondents**

Response	No. of respondents	Percentage
FSLC	10	7.7
SSCE	80	61.5
OND/NCE	20	15.4
B.Sc. and others	20	15.4
Total	**130**	**100**

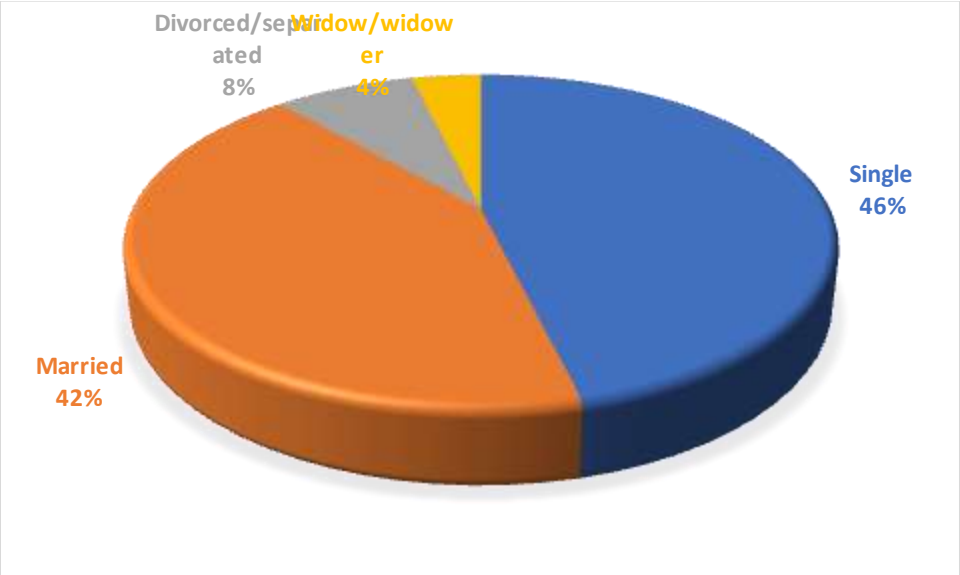


Graph 4.4: Graphical Representation of Educational Status of Respondents
Source: Field Survey, 2022.

In terms of educational level, table 4.4 and graph 4.4 shows that 10 respondents representing 8 percent had FSLC; followed by 80 respondents representing 63 percent that had SSCE; 20 respondents representing 15 percent each had OND/NCE as well as B.Sc. and other higher degrees. Hence, majority of the respondents had SSCE.

Table 4.5: Marital Status of Respondents

Response	No. of respondents	Percentage (%)
Single	60	46.2
Married	55	42.3
Divorced/separated	10	7.7
Widow/widower	5	3.8
Total	**130**	**100**



Graph 4.5: Graphical representation of marital status
Source: Field Survey, 2022

Table 4.5 and graph 4.5 shows that 60 respondents representing 46 percent are still single; 55 respondents representing 42 percent were married; 10 respondents representing 8 percent were divorcees or separated while 5 respondents representing 4 percent were widows and widowers, respectively.

4.2. Presentation of Results

Table 4.6: Regression results of the nexus between new market disruption and entrepreneurship innovation.

Dependent Variable: ENTINO

variable	*coefficient*	*Std. Error*	*t-stat.*	*Sig.*
Constant	*2.402*	*.243*	*9.881*	*.000*
NMDRT	*1.083*	*.098*	*11.051*	*.000*
R-squared	*.636*			
Adjusted R-squared	*.601*			
F-statistic	*7.712*	*Durbin-Watson stat*	*1.887*	

Source: Statistical results from SPSS 22.

Equation 1 regressed New Market Disruption (NMDRT) on Entrepreneurship Innovation (ENTINO). Thus, from a careful examination of the regression results and related statistics it was revealed that a positive relationship exists between the variables. It is equally statistically significant at 5 percent level of significance. This implies that a 1 percent rise in new market disruption occasioned by advancement in information technology will instigate entrepreneurship innovation by 1.08 percent, ceteris paribus. The implication of this finding is that technology has, in the last two decades in particular, witnessed rapid advancement, with ground-breaking and disruptive innovations which continue to challenge and transform the traditional ways of doing

business in Nigeria. New technologies have made businesses generally more convenient, easier, cheaper, timely and faster, but often come with resultant risks and consequences such as loss of jobs, reduced revenue and/or annihilation of the affected industries and companies.

The R-Squared of 0.636 is instructive and indicates a good fit for the model. Simply put, about 64 percent of the total variation in the dependent variable (ENTINO) is accounted for by the independent variable in the estimated model, leaving about 36 percent for those factors not considered in the model. The value of Durbin Watson (DW) statistic is 1.887. The tabulated DW at 5 percent level of significance using 130 observations indicated that lower limit of Durbin Watson statistic is 1.758 while the upper limit is 1.779. The calculated value (DW) = 1.887 is greater than the upper limit (Du) = 1.779, hence there is no evidence of serial correlation in the estimated model.

Table 4.7: Regression results of the relationship between low-end disruption and entrepreneurship innovation.

Dependent Variable: ENTINO

Variable	*Coefficient*	*Std. Error*	*t-Stat.*	
Constant	*2.701*	*.250*	*10.820*	*.000*
LEDRT	*.040*	*.086*	*.467*	*.641*
R-squared	*.509*			
Adjusted R-squared	*.504*			
F-statistic	*6.333*		*Durbin-Watson stat*	*1.902*

Source: Statistical results from SPSS 22.

The relationship between low-end disruption (LEDRT) and entrepreneurship innovation is presented in table 4.7. From the statistical results, a positive relationship exists between the variables, but statistically insignificant at 5 percent level of significance. This implies that a 1 percent rise in low-end disruption will lead to an increase in entrepreneurship innovation by 0.04 percent. The R-Squared of 0.509 is instructive and indicates a moderate fit for the model. That is about 51 percent of the total variation in the dependent variable (ENTINO) is accounted for by the independent variable, low-end disruption in the estimated model, leaving 49 percent for those factors not considered in the model. The value of Durbin Watson (DW) statistic is 1.902. The tabulated DW at 5 percent level of significance using 130 observations indicated that lower limit of Durbin Watson statistic is 1.758 while the upper limit is 1.779. The calculated value (DW) = 1.902 is greater than the upper limit (Du) = 1.779, hence there is no evidence of serial correlation in the estimated model.

CONCLUSION AND RECOMMENDATIONS

Predicated on the findings, this study concludes that new market disruption has a significant positive impact on entrepreneurship innovation in Calabar Metropolis of Cross River State, while the low-end disruption has positive but insignificant effect on entrepreneurship innovation. New market disruptive innovation should be design in such a way that entrepreneurial innovation will be radically oriented rather than incremental in nature so as to apply to product, service and business-model opportunities in used by entrepreneurs. Low-end disruptions innovation should be model by management of telecom firms to target overshot

customers with lower-cost business models. The rationale behind their emergence is that by over-satisfying customers' needs in hopes of higher margins; large incumbents create a vacuum at lower price points enabling competitors with disruptive technologies to emerge. Government should implement policies that have an overwhelming influence in shaping the opportunities that entrepreneur's target. Regulations created to respect the forces of innovation can create an environment ripe for yielding disruptive change. With the advent of innovation, entrepreneurs must embrace upcoming innovations so as to explore the technological and growth opportunities therefrom and give customers better and more innovative product offerings. The importance of new technology cannot be overemphasized. Entrepreneurs and other business owners should employ the use of new technology as this enhances productivity and reduces the cost of production. Meanwhile, the security implications of disruptive technology and its associated risks must be considered by entrepreneurs.

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