

Technopreneurship and Enabling Growth of Fintech Start-Ups in Nigeria

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ABSTRACT

This study examines how technopreneurship enables the growth of FinTech start-ups in Nigeria. This research's specific objectives are to: Examine the relationship between technological innovation and market opportunities identification of FinTech start-ups in Nigeria. Ascertain the relationship between technological innovation and market penetration of FinTech start-ups in Nigeria. Examine the relationship between business acumen and market opportunities identification of FinTech start-ups in Nigeria. Ascertain the relationship between business acumen and market penetration of FinTech start-ups in Nigeria. The study population comprised 160 managers and non-managerial personnel from 7 Nigeria FinTech start-ups. A sample size of 113 was determined using Krejcie and Morgan sample technique. Cross-sectional design was adopted for this study. Google online questionnaire form was used to collect data from the study sample and Cronbach Alpha reliability test with 0.7 and above results was used to test the reliability of the instrument. The formulated hypotheses were tested using multiple regression statistics. The result from the hypotheses revealed that technopreneurship is significantly associated with enabling the growth of FinTech start-ups in Nigeria. From these results, the study concluded that technological innovation is essential for developing novel financial technologies with distinctive capabilities to identify and penetrate new markets and service customers not adequately serviced or not serviced by traditional financial institutions. The study also concludes that technopreneurship variables (technological innovation and business acumen) have ensured sustainable growth of FinTech startups in Nigeria. The study recommended that technopreneurs should not only equip themselves with technical skills but also entrepreneurial acumen to enable them to effectively navigate the processes involved in becoming successful technopreneurs.

Keywords: Technology, Entrepreneurship, Innovation, Business Acumen. Market Identification. Penetration.

INTRODUCTION

Advancements in digitalization have produced innovative technologies in the financial industry. Fintech as a product of digital transformation, is a new-generation technology that has disrupted the Nigeria's traditional banking system, offering banking services without physical contact. FinTech in the last decade, has enabled increased access to financial services that are convenient for retail users. In 2002 Interswitch became the first FinTech Company in Nigeria, ever since then, Nigeria's FinTech industry has been experiencing tremendous growth making Nigeria's FinTech industry Africa's biggest and most active (Wande, 2024). Emmanuel (2023) posited that two of Nigeria's FinTech startups, Kuda and Opay made CBNC's top 200 top list. The country has seen the establishment of several top FinTech startups with a financial volume of over one billion dollars (\$1B) which include Interswitch, Flutterwave, and OPay. McKinsey's 2020 report stated that Nigeria has witnessed a surge in FinTech investment of a volume of 197%.

There is no doubt that the future of FinTech industry in Nigeria has a promising outlook. However, there are still a lot of untapped market opportunities within the industry. FinTech companies in the Nigerian market are defined by a compelling number of untapped opportunities, majorly due to the high number of unbanked and under-banked populations, the availability of digital options, and an enabling regulatory environment. Despite these growth potentials of FinTech firms in Nigeria, there are still challenges experienced by Nigeria's FinTech ecosystem such as regulatory scrutiny, stiff competition, and also untapped potential market opportunities

which pose the most significant channel for growth and innovation. Payment and consumer lending are the main FinTech activities in Nigeria, however, insurance and SMEs provide potential market opportunities in healthcare and SMEs which are largely untapped (McKinsey & Company, 2020). These untapped market gaps with potential for growth can be bridged by technopreneur in making sure healthcare premiums are available and affordable, and also by providing the SEMs segments with good packages. This is only feasible if FinTech technopreneurs can provide these services by leveraging technology.

Technopreneurship is a blend of two words "technology and entrepreneurship". Technopreneurship is the process of relying on innovative technology to design new products and services or business strategies with the purpose of starting and growing a business. Using technology to develop fresh business concepts and solutions that have the potential to upend established markets is known as technopreneurship. This has been seen in Nigeria by the rise of multiple FinTech companies that are filling in the holes in the financial services industry. The rise of FinTech startups in Nigeria has been greatly determined by technopreneurship, which merges technology with entrepreneurship to develop creative solutions for financial issues. This collaboration has resulted in a dynamic ecosystem that fosters the growth and expansion of numerous financial services throughout the nation. These firms leverage technology to offer services such as lending, payments, savings, cryptocurrency trading, investments, and insurance.

Technopreneurship is crucial in enabling the growth of FinTech startups in Nigeria because it involves individuals or teams who are able to leverage technology innovation and business acumen to establish businesses that are new as well as provide solutions within the financial sector. Technology advancement has helped startups to leverage these opportunities to create, expand, and groom their business capacity for creativity, job, striking a balance and societal affluent, local resources mobilization, performing an important complementary role to big businesses, essentially boosting the nation's economic development (Fowosire, Idris & Opoola, 2017). The development of artificial intelligence, mobile technology, data analytics, and blockchain have made available necessary tools to disrupt the financial sector, through offering innovative services such as digital wallets, peer-to-peer lending, and automated investment platforms, these technologies enable the growth of FinTech companies (Stephen, 2023).

Statement of Problem

FinTech startups face uncertainty due to Nigeria's variable and frequently ambiguous regulatory environment. Many of these FinTech firms struggle to navigate complicated compliance requirements and unstable policies. Duru and Akujobi (2020) posited that even though the Central Bank of Nigeria (CBN) has implemented efforts like the regulatory sandbox to promote innovation. This ambiguity can hinder investment and innovation, which will affect these Fintech companies' growth trajectory.

Ogunbode (2021) asserted that FinTech startups are faced with a major constraint of obtaining adequate capital. Despite the fact that venture capital interest in the industry has grown, a lot of these FinTech firms still face difficulty securing the required funding to expand. A difficult environment for new entrants is created by investors' preference for more established FinTech firms and limited access to early-stage capital (Ogunbode, 2021). Inadequate infrastructure, such as erratic internet connectivity and a lack of power, also limit the expansion of FinTech firms. These difficulties provide serious operational difficulties, especially for businesses that mostly depend on digital platforms to efficiently provide their services (Igbokwe-Ibeto, 2020).

According to EFInA (Enhancing Financial Innovation & Access) 2023 survey about 26% of Nigerians are excluded from financial activities. This is evidently seen because of the unbanked areas in rural communities, where branches of traditional banks are hardly found (Michael, 2024). Also, considering the increasing rate of Nigeria's youthful population and mobile phone penetration as well as easy accessibility to the internet, Nigeria's FinTech market is yet to be close to being fully tapped by leveraging technopreneurship, this has made the FinTech industry remain in developing state. The growth of Nigeria FinTech market has been heavily hampered by cyber-attack & KYC/identity theft problems. When this happens a lot of companies die after some time because they are not able to recover from these attacks. As Nigeria's FinTech ecosystem evolves, so do the threats (Israni, 2024). Cyber-attack & KYC/identity theft-related problem is mainly associated to ineffective innovative technologies to tackle these problems.

Evidence from a thorough review of a lot of related literature on technopreneurship and enabling growth of FinTech startups shows that there is insufficient research on this study. Also, a review of similar literatures indicated that these research works did not adopt the dimensions of this study. The need to fill this gap necessitated this study which intends to explore the impact of technopreneurship on enabling the growth of FinTech startups in Nigeria, adopting technology innovation and business acumen as the dimensions of the study while market opportunities identification and market penetration were adopted as the study measures.

Conceptual Framework on Technopreneurship and Enabling Growth

This study provided a conceptual framework that shows the interplay of the dimensions and measures of technopreneurship and enabling startup growth.

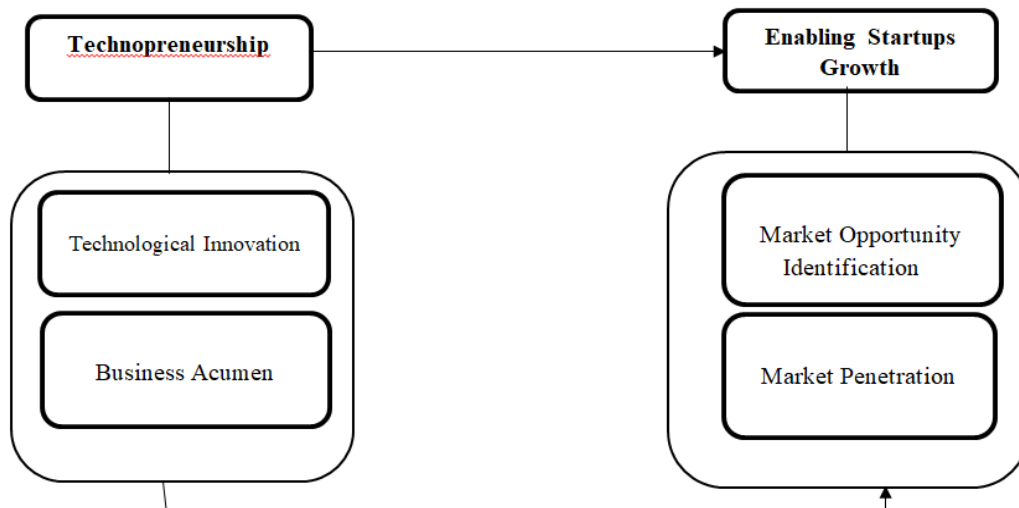


Fig. 1.1: Shows the Conceptual Framework which is based on the relationship between technopreneurship and enabling startup growth.

Source: Researcher's Conceptualization, 2024.

Aim and Objectives of the Study

The aim of the study is to explicitly examine how technopreneurship has enabled the growth of FinTech startups in Nigeria while the specific objectives are to:

- i. examine the relationship between technological innovation and market opportunity identification of FinTech startups in Nigeria.
- ii. ascertain the relationship between technological innovation and market penetration of FinTech startups in Nigeria.
- iii. examine the relationship between business acumen and market opportunity identification of FinTech startups in Nigeria.
- iv. ascertain the relationship between business acumen and market penetration of FinTech startups in Nigeria.

Research Questions

- i. What influence does technological innovation have on market opportunity identification of FinTech startups in Nigeria?
- ii. To what extent does technological innovation influence market penetration of FinTech startups in Nigeria?

- iii. What influence does business acumen have on market opportunity identification of FinTech startups in Nigeria?
- iv. To what extent does business acumen influence market penetration of FinTech startups in Nigeria?

Research Hypotheses

The following null hypotheses in the study were tested to ascertain whether or not there is a relationship between the dimensions of the independent variables and measures of the dependent variables.

H01: There is no significant relationship between technological innovation and market opportunity identification of FinTech startups in Nigeria.

H02: There is no significant relationship between technological innovation and market penetration of FinTech startups in Nigeria.

H03: There is no significant relationship between business acumen and market opportunity identification of FinTech startups in Nigeria.

H04: There is no significant relationship between business acumen and market penetration of FinTech startups in Nigeria.

Significance/Implication of the Study

This research will be significant to FinTech investors based on the substantial potential of FinTech growth and the possible returns on investment. This research will enable existing financial and traditional institutions that view finTech firms as competitors to be able to leverage financial technology to remain competitive. This study is also crucial in enabling under-banked and unbanked individuals in Nigeria to have access to financial services. SMEs can also benefit from this study as it will assist them to tailor available financial products and services to cater to their specific needs.

REVIEW OF RELATED LITERATURE

Overview of Technopreneurship

Technopreneurship is the combination of two concepts 'Technology' and 'Entrepreneurship'. Also, it is a jargon that represent the blend of technology with entrepreneurial capabilities. In simple term, Selladurai (2016) defined technopreneurship as simply entrepreneurship in the context of an intensive technological environment. It is the process of integrating technology expertise and entrepreneurial skills and talent. It is the process whereby a business oriented person use technology to establish, develop and nourish a business venture profitably. This process begins by spotting a business opportunity and then develop a product or service that take advantage of this opportunity. Technopreneurship is characterized by its potential for high growth as well as the large impact it has on knowledge and intellectual property (Mazzarol, 2011). Unlike traditional entrepreneurship, technopreneurship is the integration of technological development into entrepreneurial activities to create products and services tailored towards meeting market demands.

A technopreneur is considered as a person who disrupt the current economic order by, introducing new products and services, penetrating new markets, establishing new types of organization, exploiting new raw materials and new channels of distribution (Shumpeter, 1934). The constant changing state of digitalization has made technopreneurs to develop the distinctive capabilities to navigate this dynamic environment by harnessing the advancements in technology to drive innovation. For a technopreneur to be successful he need a combination of business acumen, creativity and technical skills. This entails that a technopreneurs must possess the capacity to spot and resolve problems, design and market innovative products and services, and manage the operational and financial areas of their business. All these are directly dependent on the technopreneur level of understanding of emerging innovative technologies and how to leverage them to create value for their customers.

Technological Innovation

Technology innovation is defined as the creation and adoption of new technologies or enhancements to existing ones, with the aim of improving processes, products, or services (Onuoha, 2018). In Nigeria's context, technology innovation encompasses numerous sectors which include finance, health, agriculture, and education, and plays an important role in solving unique problems faced by the country. The link between technology and entrepreneurship does not enhance individual businesses only, it also contributes substantially to broader societal advancements through job creation, enhancing competition, and using innovative solutions to improve overall quality of life.

At the heart of technopreneurship is technology innovation, which drives economic growth and the same time adopts creative problem-solving approaches to reshape industries. As people go through this digital age, knowing how entrepreneurial success can be advanced by leveraging technology is becoming very important (Tidd & Bessant, 2013). Software and digital tools such as e-commerce and mobile apps are used to improve business operations and engage customers. Enterprises also create competitive advantages by adopting and integrating cutting-edge technologies such as AI, blockchain, IoT, and Big Data.

Business Acumen

Gleghorn (2015) defined business acumen as simply the ability to arrive at a profitable business decision. An entrepreneur with business acumen shows the intellectual capacity to penetrate keenly into ideas. Kaplan (2006) posited that business acumen include set of skills that is acquired externally by an entrepreneur for their development with the aim of ensuring that these skills are converted to business success. It includes having a clear understanding of how the business overall performance is impacted by issues relating to decision, strategies and actions. With regards to technopreneurship which is a combination of technology innovation and entrepreneurial practices, having business acumen skill apart from innovative and technical skill is a critical skillset to be successful. A technopreneur may have the required knowledge, but inability to effectively apply this knowledge will not translate into any business goal. A technopreneur with business acumen has the expertise to scan and vet the macro environment and the ability to make effective decisions in carrying out his daily business operations.

Enabling Startups Growth

Enabling startup growth are strategies, conditions, or actions that support the development and expansion of startups, businesses, or the economy. Also, it involves developing an environment or making available resources that help startups enhance productivity, capacity, innovation, market reach, or revenue. Eze and Abubakar (2021) asserted that enabling startup growth is the process of developing an environment and making the needed support, resources, and opportunities available for the startups to nourish and boost their capabilities. In enabling startup growth, it is imperative for the entrepreneur to have access to sustainable streams of revenue to ensure financial growth and viability, this may include lucrative market identification, profit maximization, diversifying sources of revenue, and optimum pricing strategies. To achieve these financial growths it is essential for the business to adopt a lean operation model which includes removing unnecessary costs to save capital for strategic leadership that promotes innovation and growth.

Startups can be enhanced through incubators and accelerator programs which provide mentorship, resources, and networking with experienced entrepreneurs and experts in the industry who can provide important guidance and enhance the propensity for success. Also, for startups to enable growth they need to create more visibility and get to their target audience, it is essential for them to leverage digital marketing, content marketing, and social media. Startup growth is also dependent on its ability to increase customer share by a clear understanding of customer preferences using data analytics this allows the startup to adequately tailor its products or services towards various market segments thereby prioritizing customer satisfaction, attracting new customers, and boosting customer loyalty.

Market Opportunity Identification

Perco (2024) referred to market opportunity as either a need or want for a good, service, or feature that is

currently not being met or underserved. Through the identification of a market opportunity, an entrepreneur is able to launch new offerings or ensure the improvement of existing ones. Identifying the right market opportunity is facilitated through market research, customer behaviour analysis, competitor offering analysis, and identifying unserved and underserved needs (Rebecca, 2024). Market opportunity identification is an important aspect of technopreneurship process, especially in FinTech sector, it plays a crucial function in the sustainability of technopreneurship. For FinTech firms to adequately identify market opportunities, it is imperative that they analyze the numerous factors that add to the industry's expansion such as market size and growth projections, consumer preference for digital services, financial inclusion, emerging trends (blockchain technology, artificial intelligence, open banking initiatives) and strategic partnerships. Discovering market opportunities is a crucial step for companies seeking to expand and thrive in cutthroat markets. This entails identifying unmet market demands, comprehending customer behavior, and using data-driven insights to guide strategic choices. Organizations that are able to spot and take advantage of market opportunities have the capacity to experience exceptional growth (Perco, 2024).

Market Penetration

Market penetration is a process whereby a startup influences its strategies to improve its business operations, through retaining sales of present customers and seeking to attract potential customers in order to boost sales volume, without affecting its core market and product strategy. Onimbo (2014) cited Schumpeter (1943) referred to market penetration as the formation of new firm ownership to serve new markets, new sources of raw materials, and new methods of production process. Launching into a market for the first time can pose some challenges which include industry regulation issues, localization, and culture, these challenges can truncate the objectives and vision of an already established firm. Market penetration can be achieved by offering sales, enhancing the sales force, promoting products, and increasing distribution, advertising activities, and marketing budget (Bukoye and Muritala, 2023). Market penetration is a critical decision in a growth strategy that focuses on increasing market share for the existing market. By focusing on market penetration as a growth-enabling strategy, startup firms are able to develop the capacity to offer a variety of goods to consumers thereby marrying a growth strategy with a competitive strategy (Washington, 2014).

Theoretical Review

Theory of New Combination and Diffusion of Innovation Theory served as a guide for the study.

Theory of New Combination (Joseph Schumpeter, 1934)

Joseph Schumpeter presented his entrepreneurship theory in his most famous book, 'Theory of Economic Development'. The central idea guiding Schumpeter's theory is that of new combinations, which he termed innovations. According to him, an entrepreneur's core function is the combination of the factors of production into a producing organism. Schumpeter also differentiated combinations from new combinations, referring to combinations as the current order in any sphere, and the new combination is innovation. He also posited that innovation is of five types which include a new product, a new method of production, a new market, a new source of raw materials, and the creation of a new type of organization. Schumpeterian entrepreneurship view is also that of "creative destruction", which according to him produces new combinations (innovations) (Ottih, 2020).

The implication of this theory to this study is that FinTech is regarded as a creative destruction because it has produced a disruptive force that has disrupted the traditional banking industry through provision of online services thereby ending an economic order and opening the way for a new order. Also, it relates to Schumpeter's theory on the argument that inventions are not new combinations except only when it's been translated into products that are useful to society. In line with this assertion, FinTech falls into the category of a new combination because of its societal usefulness in financial inclusion.

Diffusion of Innovation Theory (Everett Rogers, 1962)

This theory was presented by Everett Rogers in her book titled "Diffusion of Innovations". Rogers referred to

diffusion as the process of communicating an innovation through some particular channels among members of a social system over time. Rogers further explained that innovation is “an idea, practice or object perceived as new by an individual or other unit of adoption” (Ottih, 2020). Rogers postulated that there are five main elements that significantly affect the spread of new ideas: the innovation itself, the communication channels, adopters, time, and a social system. For self-sustainability, innovation must be widely adopted because there is a certain rate and point of adoption at which an innovation gets to critical mass. Rogers’s categorizes five adopters of technology as Innovators, adopters, early majority, late majority, and laggards (Ottih, 2020).

In relation to this study, FinTech high growth in Nigeria was enabled due to its high rate of diffusion which was a result of the fast speed in reaching out to the unbanked population of the society who reside in rural areas, and who are the critical masses the innovation is met for. Also, Rogers’s five elements (innovation itself, the communication channels, adopters, time, and a social system) influence the spread of FinTech across the nook and cranny of Nigeria.

Empirical Review

Various studies have been undertaken by researchers on technopreneurship and enabling the growth of FinTech. Prisca and Onuoha (2022) conducted a study titled “Technopreneurship and Growth of New Tech Companies in Nigeria”. The objectives of the study were to establish the relationship between ICT self-efficacy and market penetration, ascertain the relationship between adaptability and market penetration, and determine the relationship between innovation and market penetration. The study adopted a cross-sectional survey of the quasi-experimental research method. A sample size of 132 was obtained from a population of 376 adopting the Taro Yamen formula. A structured questionnaire was used to elicit information from the respondents. Information was collected from 132 respondents using a simple random sampling technique of which to total of 110 questionnaires were seen as relevant for the study. The study adopted Spearman rank-order correlation coefficient as the method of data analysis. The study result findings revealed that there is a positive significant agreement among the study respondents that technopreneurship through ICT self-efficacy, adaptability, and innovation enhances Tech companies’ growth in Nigeria. The study recommended that technopreneurs should endeavor to obtain the required ICT skills, and should be able to adjust to changes in technology while also providing innovative products.

Dutse, Ningi and Abubakar (2013) conducted an empirical study on the topic "Technopreneurship and Enterprise Growth in Nigeria: An Exploration into the Latent Role of Microfinance Banks". The objectives of the study were to examine the relationship between microfinance services availability, technopreneurial growth, and growth of enterprises in Nigeria, and ascertain the relationship between technopreneurship growth drive of MSMEs and accessibility of microfinance services in Nigeria. The study adopted a survey research method. A sample size of 400 was obtained from the population of 17,284,671 using an approximation procedure. SPSS was used to test the generated data while coefficients of Pearson correlation were used to analyze the data. Findings from the study showed that there is a positive strong relationship between microfinance services accessibility, technopreneurship drive, and enterprise growth. The study concluded that technopreneurship enables the growth of enterprises in Nigeria.

METHODOLOGY

A cross-sectional research design was adopted for this study. 160 respondents make up the population of the study, these respondents include manager and non-managerial personnel from 7 FinTech firms operating in Nigeria. These FinTech firms and their unit population include Opay – 42 respondents, Interswitch – 26 respondents, Moniepoint – 23 respondents, Remita – 21 respondents, Palmpay – 18 respondents, Paystack – 18 respondents, Kuda – 12 respondents. This sums to a total population of 160 respondents.

Krejcie and Morgan sample table was used to determine the sample size of 113 respondents from the population. Google questionnaire was used to collect data. A 4-point Likert scale was used to measure the four-item statements of the study variables. Face and content validity was adopted for the study and Cronbach Alpha test was used to ascertain the reliability of the instrument. After testing the reliability the results achieved were as follows; technological = 2, innovation = 0.79, no. of items = 4. Business acumen = 0.86, no.

of items = 4, and Innovation = 0.89, number of items = 4. The result shows that the study variables items met the 0.7 reliability benchmark which shows that the study instrument was reliable.

Mode Specification

The econometric model used for this study is shown below:

$$Y = f(x)$$

When y = predictor variable

X : = criterion variable

The current study model rely on the following conceptual framework created;

$$Oc = f(pli, fli)$$

When explicitly expressed the equation above becomes

$$Oc = \alpha_0 + \alpha_1 pli + \alpha_2 fli + \mu$$

Where:

oc = Enabling startup growth

pli = Technological innovation

fli = Business acumen

α_0 = Constant or the intercept coefficient

$\alpha_1 - \alpha_2$ = Each individual independent variable regression coefficient.

μ = Error term

Data Analysis and Results

Managers and non-managerial personnel of 113 staff were reached using a Google questionnaire of which 106 copies of questionnaires were completed and returned. Thus, the p-values of the hypothesis tested were critically examined so as to either reject or accept any hypothesis stated. The study rejected the null hypothesis has a p-value less the 0.05 (level of significance) value and the alternative hypothesis was accepted. The demographic variables were analyzed using descriptive statistics, while the relationship between the independent and dependent variables was tested using multiple regression analysis. This result indicated that a reasonable portion of the participants' responses was in favour of the questionnaire items. The demographic analysis results are as shown below.

Table 1: Demographic Data of Respondents Analysis

Sex	Feedback	%
Male	64	60.4
Female	42	39.6
Total	106	100.00
Age	Feedback	%
18-35 Years	45	42.5

36-45 Years	38	35.9
46-55 Years	23	21.6
Above 55 Years	-	-
Total	106	100.00
Educational attainment	Feedback	%
Two Years Diploma	36	34.0
B.Sc. and HND	45	42.5
MSC and MBA	23	21.7
PhD	2	1.8
Total	106	100.00
Current Position in the Firm	Feedback	%
Managers	61	57.5
Non managerial personnel	45	42.5
Total	106	100.00

Source: Researcher's Desk (2024).

Table 1 above shows that 64(60.4%) were male while 42(39.6%) were female. This indicates that a lot of the respondents were male. Table 1 shows that the majority of the respondents were B.Sc. and HND holders and they represented 45% of the overall respondents, next are respondents with two years diploma qualifications 36(34.0%), and those with MSC and MBA represent 23(21.7%), while only 2(1.8%) of the respondents held PhD degree. Table 1 also shows the respondents age bracket, 45(42.5%) were between 18-35 years. 38(35.9%) were between 36-45 years, 23(21.6%) were between 46-55 years. The table reveals that the majority of the respondents are between the ages of 18-35. Lastly, the result from the table reveals that managers were 61(57.5%) while non-managers were 45(42.5%). This showed that the majority of the respondents were managers.

Descriptive Analysis

Descriptive statistics were used to analyze the research questions, these descriptive statistics include Mean score and standard deviations. Likert's 4- 4-point scale was adopted and the criteria for mean score acceptance for the items was 3.0 and higher. The dependent mean was focused on the Likert 4-point scale which is; $(1+2+3+4)/4 = 10/4 = 2.5$

The acceptable level states that the mean score should not go below 2.5. Any mean score that goes below 2.5 was rejected. Table 2 shows the variables' univariate analysis as well as their mean score and standard deviation shown beside them on the tables.

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Technological Innovation	106	1.00	4.00	2.8721	1.35937
Business acumen	106	1.00	4.00	3.1236	1.60684

Market opportunity identification	106	1.00	4.00	3.3553	1.52977
Market penetration	106	1.00	4.00	2.9627	1.48307
Valid N (listwise)	106				

Source: SPSS Output (2024).

The result in Table 2 indicates that for all variables $n=106$, strongly disagree represents the minimum response level which is 1.00, and 4.00 which represents strongly agree is the maximum.

The mean scores of 2.8721 for technological innovation, 3.1236 for business acumen, 3.3553 for market opportunity identification, and 2.9627 for market penetration show that all the variables scored beyond the 2.5 criterion mean on the Likert 4-point scale. Nevertheless, these reveal that there is a positive response in relation to the items on technopreneurship and enabling firm growth in this study.

Test of Hypotheses

This section showed that the null hypotheses formed were tested to determine the influence the independent variables has on the dependent variables. Multiple regression coefficients was applied to achieve this.

Table 3: Model Summary

Mode 1		R Square	Adjusted R Square	Std. Error of the Estimate	Change	Statistics			
	R				R Square Change	F Change	df1	df2	Sig. F Change
1	.967a	.952	.942	.33778	.942	1026.246	2	103	.000

a. Independent: (Constant), technological innovation, business acumen

b. Criterion Variable: Market opportunity identification

Source: SPSS Output (2024).

The value 0.967 revealed that there is a reasonable level of prediction. The 0.942 value of “R Square” is part of the variance in the market opportunity identification that is explained by technological innovation and acumen. Thus, table 3 shows that the variation of 5.8% (100% - 94.2%) is caused by factors that are not the predictor involvement in this model. Thus, a 94.2% proportion of variance in market opportunity identification is explained by technological innovation and business acumen.

Statistical Significance of the Predictor Variable:

The statistical relevance of each of the predictor variables measures if the non-standardized or standardized coefficients were qualified as 0 in the population which means (for each of the coefficient, $H_0: \beta=0$ & $H_a: \beta \neq 0$). If $p < .05$, then the coefficients are said to be statistically relevantly different from 0. The relevance of these significant tests is to determine if each of the test is valid.

Table 4: Coefficients^a

	Non-standardized	Coefficient	Standardized Coefficients		
Model	B	Std. Error	Beta	T	Sig.
1 (Constant)	.065	.065		1.008	.316

Technological innovation	.660	.107	.615	6.037	.000
Business acumen	.336	.077	.347	3.337	.000

a. Criterion Variable: market opportunity identification

Source: SPSS Output (2024).

Seen that, t-value and the corresponding p-value are both in columns “t” and “Sig” respectively, the tests show that the standardized coefficient with beta value of 0.615 is for Technological Innovation when $p(.000) < 0.05$. This represents a positive strong effect of Technological Innovation when $p(.000) < 0.05$ on Market Opportunity Identification. Again, the .347 of Business Acumen has a positive as well as a moderate effect on Market Opportunity Identification. What this means is that both independent variables significantly affect market opportunity identification.

Table 5: Model Summary^b

					Change	Statistics			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.935 ^a	.937	.926	.41541	.937	556.381	2	103	.000

a. Independents: (Constant), business acumen, technological innovation

b. Criterion Variable: Market penetration

Source: SPSS Output (2024).

The value of 0.935 reveals a positive prediction level. The proportion of variance in Market Penetration that is explained by Technological Innovation and Business Acumen is the “R Square” of 0.926 which is the R^2 value. Thus, table 6 shows 7.4% (100%-92.6%) of the variation is impacted by others than the independents included in the model. Therefore, 92.6% proportion of the variance in Market Penetration is explained by Technological Innovation and Business Acumen.

Table 6: Coefficients^a

	Unstandardized	Coefficients	Standardized Coefficients		
Model	B	Std. Error	Beta	T	Sig.
1 (Constant)	.501	.093		5.224	.000
Technological innovation	.991	.155	.545	4.178	.000
Business acumen	.374	.121	.373	2.700	.003

a. Criterion Variable: market penetration

Source: SPSS Output (2024).

Seen that, t-value and corresponding p-value are in columns “t” and “sig” respectively, the test reveals that Technological Innovation has a standardized coefficient with beta value of 0.545 when $p(.000) < 0.05$. This is relevant to the strong impact of Technological Innovation when $p(.000) < 0.05$ on market penetration. Again, the .373 of Business Acumen is positive and has an average impact on Market Penetration. This indicates that the two independent variables significantly affect market penetration.

DISCUSSION OF FINDINGS

The findings obtained from the analysis are elaborated to clearly understand the relationship that exists between the dimensions of technopreneurship and the measure of enabling startup growth. These relationships are discussed under the following subheadings.

Relationship between technological innovation and market opportunity identification

Table 4 shows that there is a significant positive relationship between technological innovation and market opportunity identification of FinTech startups in Nigeria. In today's globalized world driven by rapid changes and advancements in technology, the ability for firms to identify market opportunities is imperative to their survival. Sokutu (2023) posited that market opportunities can come from various sources which include emerging technologies, market disruptions, shifting consumer needs, and societal trends. New technological advancements and maturity such as 3D printing, 5G communication, and artificial intelligence (AI) are innovative disruptive forces that have enhanced the growth of FinTech industry (Yu Wan & Du, 2023). This clearly indicates that firms that are able to adapt and take advantage of the opportunities from technology changes by leveraging new technologies become innovative which enables them to spot gaps in the market.

Nigeria's FinTech ecosystem is among the most rapidly growing in Africa, largely because of the country's large growing youthful population, rising accessibility of the internet, and widespread use of mobile phones. This pose a big potential for FinTech firms in Nigeria that provide solutions that tackle financial non-inclusion, to affirm this the World Bank estimates, 60% of Nigerians lack accessibility to various traditional banking services. This presents huge market opportunities for FinTech startups in Nigeria that offer solutions that address financial inclusion by using innovative solutions to bring these unbanked populations into the financial ecosystem. FinTechs such as Kuda Bank, Opay, Moniepoint, and Fairmoney provide tailored services to satisfy the needs of people who were previously unable to access banking facilities (Akanji, 2021).

Relationship between technological innovation and market penetration

Table 6 shows that there is a significant positive relationship between technological innovation and market penetration of FinTech startups in Nigeria. Ojo et al (2021) opined that the relationship that exists between technological innovation and the market penetration of FinTech firms in Nigeria is significant, showing how these firms are able to reach and provide important financial services to wider audiences through advancements in technology. Logically it might be argued that technological innovation could lead to market penetration. This is seen in how FinTech firms in Nigeria have tried to break new market grounds through financial inclusion.

In the dynamic financial technology landscape, filling market gaps within the FinTech industry involves penetrating unexplored territories which entails providing financial solutions to unserved or underserved consumers using advancements in technology. Hassan & Opeyemi (2021) asserted that FinTech like Flutterwave and Paga have been able to provide solutions that are very important in a population that is largely unbanked by facilitating seamless digital payment solutions through leveraging mobile technology. Afolabi et al (2022) affirms that technological innovation helps FinTech firms to lower the costs of their services, thereby easily penetrating new markets, they also posited that digital solutions enable FinTech firms to lower their operational costs and helping them to offer competitive market pricing, thereby attracting more customers. FinTech firms like Branch, FairMoney, RenMoney, and Paystack have been able to adopt AI in scrutinizing credit risks, ensuring they are able to serve populations without traditional credit histories (Smith, 2020).

Relationship between business acumen and market opportunity identification

Table 4 shows that there is a strong positive relationship between business acumen and market opportunity identification of FinTech startups in Nigeria. Business acumen includes effectively understanding customer's needs, competitive landscape, and regulatory environments. In Nigeria's FinTech industry, where conventional banking methods are not efficient enough, FinTech firms require technopreneurs who possess strong business acumen to effectively navigate these dynamics. For Nigeria's FinTech startups, having strong business acumen

empower technopreneurs to make informed business decisions, understand customer needs, and sail through regulatory landscapes. FinTech firms with solid business acumen are able to discover new opportunities by better leveraging technology. Ugochukwu (2019) asserted that understanding technology trends such as blockchain and AI can enable FinTech firms in Nigeria to establish disruptive products and services that capture large market share. Nwankwo (2018) emphasizes that astute leadership enables FinTech firms to effectively identify market gaps, like underserved populations that need innovative financial products. Technopreneurs with good business acumen can examine pain points of customer and offer solutions that are tailored. Akor (2020) states that being aware of customer preferences and behaviors is important for designing products that match market needs. For example, the increasing adoption of mobile payments in Nigeria is a response to the challenge of financial inclusion, which well-informed technopreneurs have capitalized on. Building relationships is a critical component of identifying market opportunities. Oye (2020) posited that strong business acumen enables FinTech technopreneurs to enhance partnerships with conventional banks, tech companies, and regulatory agencies, allowing access to innovative collaborations that are capable to effectively solving the financial needs of Nigerians.

Relationship between business acumen and market penetration

Table 6 shows that there is a significant positive relationship between business acumen and market penetration of FinTech startups in Nigeria. According to Alese (2018), strong business acumen enables FinTech technopreneurs to create and enforce strategies that are sensitive to regional demands and market circumstances. This strategic planning is important for achieving growth strategies through successful market penetration. Olusanya (2021) asserted that finding and focusing on the appropriate consumer segments requires strong business acumen. FinTech companies can improve their penetration strategies in a variety of Nigerian marketplaces by customizing their goods to match particular needs through the analysis of demographic and economic aspects. FinTech technopreneurs that exhibit technological competence, which is a component of business acumen, frequently have greater success putting creative concepts into practice. For example, using mobile technology to provide financial services might greatly increase market penetration among unbanked people in Nigeria (Irele, 2022). Rufai (2023) points out that technopreneurs with a strong sense of business acumen can perform in-depth competitive assessments to comprehend marketplace dynamics, which enables them to properly position their products and implement strategies to gain market share as opposed to well-established rivals.

Limitation of The Study

A significant limitation of the study is the fintech ecosystem in Nigeria which is highly evolving due to advancements in technology and regulatory changes. A study carried out over a particular period may quickly become obsolete due to the emergence of recent trends or changes in existing conditions. This dynamic situation makes it difficult to capture a correct snapshot of the present state of technopreneurship and the growth of fintech in Nigeria. Another significant limitation of the study is the small sample size which may not be sufficient enough to represent the wider population of fintech start-ups in Nigeria.

CONCLUSION

It makes sense to say that advancement in technology is essential to the survival of FinTech startups in Nigeria which is largely due to the fact that it is heavily embedded in technology as well as solid business acumen. Technopreneurs are the driver behind FinTech startups due to their solid technical skills. For FinTech startups to ensure sustainable growth, the availability of the market is important. The imperativeness of the market to FinTech startups necessitates the need for them to identify potential market opportunities and how to penetrate existing and new markets. Findings from the study data analysis and discussion of findings concluded that technopreneurship variables (technological innovation and business acumen) have ensured sustainable FinTech startup growth in Nigeria through the identification of new market opportunities and market penetration.

RECOMMENDATION

Revelation from the above findings and conclusion, the researcher drew the following recommendation to the

following stakeholders.

1. FinTech startups in Nigeria should not only focus on designing products and services with good features but also how to get them into the market is equally important.
2. FinTech startups should also learn how to embrace technological advancement by adapting to technological changes for firm growth and survival.
3. Technopreneur should not only rely on their technical expertise but should also acquire the right strategy to succeed by having solid business acumen to help them navigate the complexities of FinTech ecosystem.
4. Both Nigeria federal and state government should ensure the necessary enable environment that will ensure the growth of FinTech startups are available.
5. This work also recommended to underserved and unserved financial service customers to leverage FinTech for their financial needs.

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