



THE IMPACT OF MULTIPLE BUSINESS MODEL INNOVATION ACTIVITIES ON NIGERIAN MICROFINANCE BANKS' PERFORMANCE

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ABSTRACT

This study explores the extent of the impact that business model innovation activities have on microfinance banks' performance. It also demonstrates how microfinance banks improve their performance level by adjusting their business models, which is made possible by deploying a series of business model innovation activities. Using a primary data sourced from questionnaire survey, the authors collected data from a sample of 150 top management officials in Nigerian microfinance banks from November 2019 to December 2019. Apart from empirically testing the reliability and validity of data collected, this study tested the hypotheses developed using multiple linear regression analysis.

The findings from the analysis showed that each business model innovation activity had a significant positive influence on the performance level of the microfinance banks. When used together in the same model, the multiple business model innovation activities increased the performance of the Nigerian microfinance banks even more.

This study confirms the positive impact of business model innovation on microfinance banks' performance and also provides an additional empirical and statistical evidence, confirming the nature of the relationship existing between business model innovation and the performance of a firm. Finally, this research confirms innovating multiple business model innovation activities in the BMI framework as another possible approach to business model innovation.

KEYWORDS: *Business model innovation, Business model innovation activities, Nigerian microfinance banks, Performance*

Abbreviations: *BM- Business model; BMI- Business model innovation; MFBs-Microfinance banks*



Introduction

The year 2005 saw the establishment of microfinance banks (MFBs) in Nigeria by the Nigerian federal government through the aid of the Central Bank of Nigeria (CBN), and also gave the MFBs the responsibility of empowering the poor or the under-banked at the grassroots level and small businesses that lack access to the conventional banks, to help them become self-reliant by involving themselves in economic activities and also create wealth by doing so [1]. Van Manrfer, as quoted in [2], made it clear that the primary role of microfinance banks includes making available essential financial services such as credit, savings, etc. to hundreds of millions of poor masses who are too poor and unable to be served by regular banks because of their inability to provide adequate collateral.

Although Nigerian MFBs have achieved financial and social inclusion for more Nigerian poor masses and small businesses, this achievement is relatively slow-paced due to the challenges currently faced by the Nigerian MFBs. These challenges include; frequent policy changes by CBN, inadequacy of skilled personnel, weak physical and technical infrastructure, changes in customers' needs, competition from Fintech companies, inflation wiping away savings from consumers, pandemic, inability to make a profit that guarantees microfinance banks sustainability due to that limited operation, limitations in their existing business models, etc. The employment of business model innovation would help Nigerian MFBs redirect their attention to the root problem facing of which MFBs business model is one of them and help solve them.

When firms and entrepreneurs lacking a well-developed business model still decide to engage in innovation practice (product or service innovation), the endpoint result is that they will still be unable to deliver and capture values from engaging in such innovations [3].

Business model innovation (BMI) focuses on changes in the business model of a firm[4-6], and is an important means of reviving a company's growth and increase company's profit [7], which will, in other words, improve a company's performance level. We show in this paper how BMI does the same for Nigerian microfinance banks.

In recent years, empirical research that tests the effects of BMI on the enterprise's performance is relatively few and almost virtually nonexistent in the microfinance bank sector. There have also been several types of research on how different industries and firms engage in BMI. Still, most of these researches mainly focus on industries and firms located



outside Nigeria. Very little research on this concept has been conducted in Nigerian and even none in the Nigerian microfinance banks. Therefore, this study focuses on examining the impacts of business model innovation (BMI) on Nigerian microfinance banks' performance level.

We begin by investigating the relationship between the various business model innovation elements or activities and a firm's performance by reviewing relevant works of literature and theoretical conceptualizations. Within the same context, we assess the specific business model innovation activities, how they impact and improve performance, and based on that, offer a collection of associated hypotheses. Next, using an empirical method, the sample data and the construct measures are discussed and evaluated. Lastly, the relationships between the constructs used in this study are assessed and discussed.

Theoretical background and Research hypotheses

Business model and its elements

After the emergence of the business model as a concept in the late 1990s, series of attempt has been made by different scholars to give their definitions of a business model based on their various field of study and area of discipline including e-business, strategy, information systems, management, entrepreneurship, innovation, etc. [3, 8-13]. Hence, the different definitions of the business model concept put out by other scholars were for various purposes and in various contexts to facilitate the development of the business model as a concept in an emerging field of study.

One of the earliest and also the most basic definition of business model is seen as the manner in which a firm does business[14, 15], it spells out how any business enterprise makes its profits [14, 16].A more complex definition sees it as a core architecture (the complex or carefully designed structure of something) of a firm which should involve how the resources of the firm should be used to generate revenue [17]. Focusing more on the creation of value from the customer perspective, which is also directly linked to value capture, a business model of any firm, even in its quest to generate revenue for itself, will also provide for its customers a greater value more than what its competitors will ever provide[18]; hence a business model should be able generate value for the consumers [8, 19]. However, a business



model concept in its entirety encompasses how an enterprise creates and delivers value to customers and captures value by doing so [3, 20-22].

Researchers who describe elements (also known as components/building blocks/functions) of a business model [16, 22-24] considers business model as a structure made up of a variety of activities and connections between these activities. Hence, this definition avoided the study's restriction to a narrow, predefined theoretical framework that may only be appropriate for particular types of businesses or BMs[19].

The most widely referenced framework of the BM is the popular Business Model Canvas [22, 24, 25]. The Canvas considered nine building blocks for value creation, which is arranged in four separate pillars namely; 'customer interface' (i.e. relationships, segments and channels), 'value proposition' (i.e. a firm's core offering), 'financial aspects' (i.e. cost/revenue structure) and 'infrastructure management' (i.e. activities, resources, and partners) [24].

Richardson [26] later refined previous business model frameworks[11, 16, 25, 27], etc., into three major components: 'value proposition', 'value creation and delivery system' and 'value capture' [26]. The Richardson [26] simplified and comprehensive business model framework mostly incorporated the components of previously existing business model frameworks.

This study adopts a business model's definition as the logic by which companies create, deliver, and capture value to their customers. This paper adopts the business model framework as refined and proposed by Richardson[26], as the framework includes previous existing ideas about business models in a simple structural pattern.

Activity-based approach of Business Model Innovation (BMI)

The literature on business model innovation (BMI) is primarily concerned with the changes that occur in a firm's business model, and there are various viewpoints from scholars on this change (e.g. [5, 6, 28, 29]). The activity-based approach of BMI sees BMI as the configuration of a collection of interconnected activities that goes beyond the limits of a particular firm[30].

While the element-based approach of BMI sees it as the changes in the BM elements[31], the activity-based approach views BMI as a change in specific BM activities as areas of innovation when exploring alternative business models [15, 30, 32]. Also, the activity-based approach exposes the continuous interaction between business model component activities [33], and these unique system of activities involves "*what is done, who does it, how and why it is done*" activities within the set are linked[15, 33]).

To confirm that business model innovation have taken place, at least one of the elements/components/dimensions of business model must have undergone changes to the extent of being noticed in the market [34]. Wirtz[34]also noted that innovation have to take place in the either of the core elements of BMI, which are value proposition and value constellation (also referred by other scholars and authors as operational value or value creation architecture).

To this end, this study adopted the three dimensions of BMI activities as proposed by Richardson[26]framework and then derived 13 sub-dimensions from the three dimensions to complete this study (see Fig. 1).

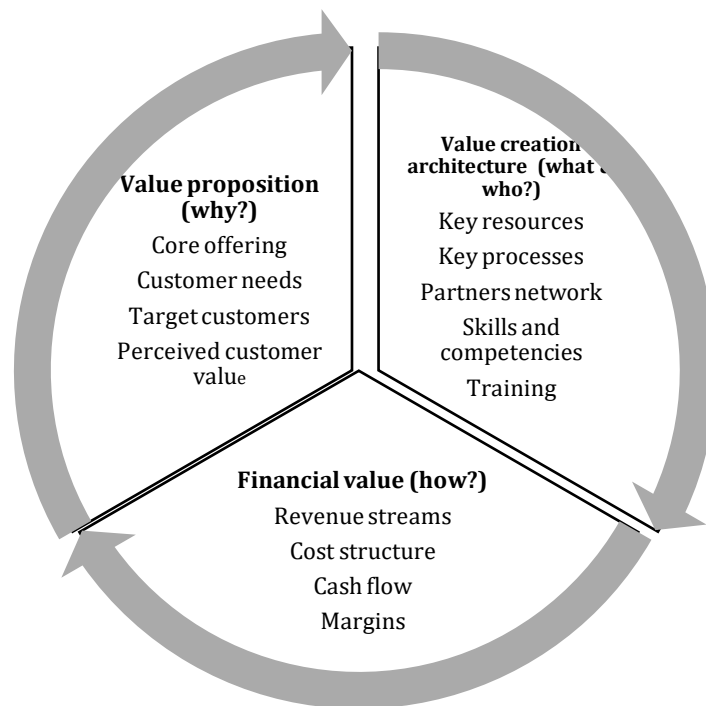


Fig. 1 Business model innovation framework adopted in this study (authors' construct)

BMI & Performance

Performance in relation to a firm is the degree to which a firm is able to achieve for a certain period positive results compared with the results of others. Any firm with a laudable performance must be better in fulfilling long-term business objectives than other firms in the same industry [35].



A recent literature review showed that there are a growing consensus and agreement that business model innovation (BMI) is essential to any firm's performance [32, 36][37][38]and it's an important mechanism that helps firms to thrive and remain competitive in a very much demanding and challenging environment [39].Novelty-centered business model design which is achieved by business model innovation also creates a positive effect on the performance of an entrepreneurial firm [15]. Firm performance can be sustained when innovating business models through newly emerging and discretionary changes [19].

Firm performance can be measured with these three indicators: production, finance and marketing [40], or indicators such as growth and profit[41]. The financial performance of an organization is often measured in conjunction with its overall performance. This is due to an emphasis on overall results and value goals, as well as the fact that conventional financial analysis approaches focused on profitability assessment are often the only instrument used to analyze business performance in practice. In this study, performance is measured using two indicators, namely: market and financial performance. While financial performance was measured with the bank's sales growth rate and profit growth rate, while market performance was measured with market share and market value and all these items were mainly adapted from past studies [38, 42, 43].

RESEARCH HYPOTHESIS

Below are the hypothesis arrived from the above literature analysis.

- i. Engaging in Value proposition BMI activities will positively impact the bank's performance (H_1).
- ii. Engaging in Value creation architecture BMI activities will positively impact the bank's performance (H_2).
- iii. Engaging in Financial value BMI activities will positively impact a bank's performance (H_3).

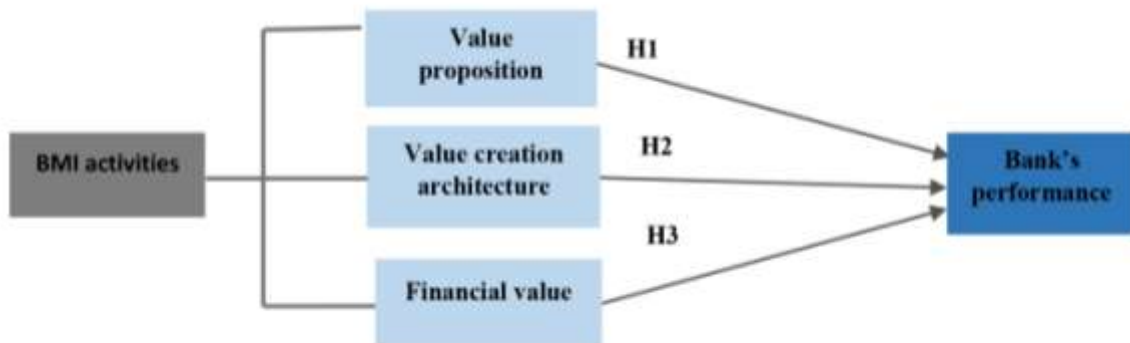


Figure 2: Conceptual Model (authors' construct)

DATA AND METHODS

Sample and Data collection

For the purpose of this study, a target sample of 50 Nigerian microfinance banks (belonging to either first or second-tier) located in the North, west, and east geographical locations in Nigeria. This study employed the survey questionnaire as the tool for data collection since the aim of this study is to obtain quantitative data that will be statistically computed from a large sample to test research questions and hypotheses [44]. A *simple random sampling technique* was the technique used in collecting data from the target informants, which included top management officials that had vital positions in the microfinance banks such as the general managers, head of departments, other high ranking managers in the bank and executives, and senior high-level aides and assistants in the bank.

This study made use of a *cross-sectional data collection method* to gather data from the target informants, and the questionnaire survey was administered to the target informants from November 2019- December 2019. Prior to the main questionnaires' official administration, a pilot testing of the questionnaire was engaged in; hence, the questionnaire was administered first to 21 management officials of 6 microfinance banks to reduce ambiguities related to the question item construct and layout.

Out of the 220 questionnaires administered, this study was only able to obtain 150 valid questionnaire responses after discarding 25 questionnaire responses that were deemed invalid



because the questionnaire was not thoroughly answered which made it unsuitable for data analysis. The valid questionnaires account for 68.1% of the true response rate.

Measures

This study adapted or used the existing scales in the works of literature reviewed to measure the constructs used in this study. All of the scales of measure used were five-point Likert scales, and respondents provided scores ranging from "1 = strongly disagree" to "5 = strongly agree" to show their level of agreement with the scale elements. This study made use of multiple independent variables, which are the three dimensions of business model innovation activities and also the significant components of business model innovation which include Value proposition (VP), Value creation architecture (VCA), and financial value (FV).

This study's value proposition was measured as those elements that answer the "why" question of the modification of an enterprise's business model. The scale for value proposition consists of core offering, customer needs, target customers, and perceived customer value adapted from prior studies [45-48]

Value creation architecture was measured as those elements that answer the "what" and "who" questions in any firm's or organization's business model innovation. The scale for value creation architecture consists of key resources, key processes, partners' network, training and skills and competencies which were adopted and modified from previous studies [19, 45, 49-52]

Financial value was measured as those elements that answer the "how" question in the procedure for innovating a firm's business model. The scale includes revenue streams, cost structure, cash flows, margins, and these were also adopted from previous studies [19, 45, 50, 52, 53].

This study measured performance as a firm's financial and market performance relative to those of its competitors. The scale used in measuring Nigerian microfinance bank performance was made up of four items that were adapted from previous research [38, 41-43, 54, 55]: (1) the sales growth rate ;(2) the profit growth rate; (3) the market share growth; and (4) the market value



Data Analysis Results and Discussions

Descriptive statistics

From the data collected, there were more males (101) than females (49). The age range with the highest number of respondents was the age range of 31-40 years (45.3%), and 34.0% of the total sample size age ranged from 41-50 years, showing that the corporate actors and top management officials of Nigerian Microfinance banks are predominantly middle-aged people. A more significant number of the respondents had been working in their current bank for a longer time. Only a percentage of 6% had worked in the current bank for less than a year. In confirming the respondents' position, the results show that a more significant percentage of the respondent was working as the general manager (32%) and chief financial officer (23.3%), and the rest of the percentage working as CEO/board member, senior executives, head of credit or loans, head of the marketing department and head of IT department

Table 1: Pearson Correlation and Descriptive statistics

	Dependent Mean	Independent Value creation	Independent Financial Value	Independent Value Proposition
Dependent Variable Dependent Mean	1			
Independent Variables Independent Value creation	0.784**	1		
Independent Financial Value	0.711**	0.845**	1	
Independent Value Proposition Descriptive	0.776**	0.743**	0.625**	1

**Statistics**

Mean	3.9333	3.895	3.6578	3.8817
Mean Std. Error	0.08819	0.06859	0.08935	0.07987
Std. Deviation	1.08012	0.8401	1.09432	0.97824
Minimum	1.5	2	1.33	1.5
Maximum	5	5	5	5
N	150	150	150	150

**. Correlation is significant at the 0.01 level (2-tailed).

Reliability Test

To ensure the reliability of the data, we conducted a Cronbach alpha's internal consistency reliability test. An acceptable reliability score, should be 0.7 or higher [56].

The result in the table below shows that the variable with the lowest reliability value had $\alpha=0.863$, showing that each question item of the variables met the preferred threshold value of 0.7; hence, the data is accurate and can be used for further data analysis.

Table 2: Cronbach's alpha reliability test

Variables	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
External challenges	0.863	0.852	5
Value proposition	0.866	0.864	4
Value creation architecture	0.875	0.832	5
Financial value	0.908	0.908	4
Performance	0.960	0.961	4

Validity Test

This study employed exploratory factor analysis to establish the construct validity of the constructs. Based on the KMO test golden rule, only the KMO values between 0.8 and 1 are



acceptable. Without adding the dependent variable items, the results from the factor analysis below show that the KMO value of 3 factors of BMI activities (Value proposition, Value creation architecture, and Financial value) = 0.873, which is higher than 0.05 with Sig. of 0.00. When the dependent variable items are added, it gives an even higher KMO value of 0.907. As a result, the data's validity for exploratory factor analysis is verified.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.873
Approx. Chi-Square	2474.535
Df	78
Sig.	0.000

Regression Analysis

Regression analysis is an in depth analysis used to further test the effect of business model innovation activities on Nigerian microfinance bank's performance and this was computed by estimating a total mean score for the questions in the different sections of the questionnaire without including the demographic information. BMI activities (value proposition, value creation architecture and financial value) which were the independent variables were grouped into three separate groups and groups' average mean value was computed for the analysis. The average mean score of each BMI activities are as follows; value proposition (VP) average mean=4.2306, value creation architecture (VCA) average mean = 4.3107, and financial value (FV) average mean=4.4387.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error	Change Statistics				
					R Change	Square Change	F Change	Sig. Change	F
	0.840a	0.706	0.700	0.59135	0.706		117.034	<0.0001	

Predictors: (constant), financial value, value proposition and value creation architecture

In Table 4 we discovered that our model's adjusted R^2 is 0.706. This means that the linear regression explains 70.6 percent of the variance in the data. The above table indicates that the independent variables (value proposition (VP), value creation architecture (VCA), and financial value (FV)) explain 70.6 percent of the variation in the dependent variable (bank performance).

The change in the model was significant ($F=123.489$, $P<0.0001$) because the p-value was less than the significant level ($\alpha = 0.05$).

Table 5: Regression Coefficient Table

Model		Unstandardized		Standardized		
		Coefficients		Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-0.127	0.238		-0.533	0.595
	Independent Value Proposition	0.478	0.74	0.433	6.458	0.000
	Independent Value Creation Architecture	0.404	0.126	0.314	3.216	0.002
	Independent Financial Value	0.172	0.083	0.175	2.084	0.039

Dependent Variable: Dependent Mean a

In the regression coefficient table, the p-values of the independent variable value proposition and value creation architecture equals 0.000 and 0.002 respectively, which is apparently less than the 0.05 (i.e., significance level). In the same manner, the p-value of the independent variable financial value equals 0.39 which is also <0.05 . This shows that all the independent variables are all significant ($p < 0.001$). Hence, the evidence in the above data is sufficient to reject the null hypothesis ($\beta_0 = 0$) and agree with the alternative hypothesis of a non-zero correlation. Changes in value proposition (VP), value creation architecture (VCA), and financial value (FV) independent variables are linked with changes in the bank's performance variable. These three independent variables are all statistically significant, and all significantly impact the dependent variable.



From the table above we can notice that the most significant set of business model innovation activities are mainly the value proposition ($\beta=0.478$, $p < 0.05$) and value creation architecture ($\beta=0.404$, $p < 0.05$) dimensions, the lowest activity changes occur in the financial value ($\beta=0.172$, $p < 0.05$) dimension. The value proposition business model innovation activity increased the bank's performance level to 47.8%, value creation architecture business model innovation activity increased the bank's performance level to 40.4%. In comparison, financial value business model innovation activity increased the bank's performance level to 17.2%.

Although this result satisfies all the three hypotheses (H1, H2, H3), which states that value proposition (VP), value creation architecture (VCA), and financial value (FV) business model innovation activities, respectively, has a positive impact on the bank's performance, this study shows that value proposition and value creation architecture dimensions have a more significant positive effect on the performance level of Nigerian microfinance banks, hence, Nigerian microfinance banks are encouraged to engage more on value proposition and value creation architecture business model innovation activities.

CONCLUSIONS AND IMPLICATIONS

This study addresses the impact of business model innovation activities on Nigerian microfinance banks' performances with the data collected from 150 top management officials in the Nigerian microfinance banks, analyzed with a comprehensive, empirically verified model. This study demonstrate how the three dimensions of business model innovation activities (value proposition (VP), value creation architecture (VCA), and financial value (FV)) work together to improve the performance level of microfinance banks to 70.6%.

The findings from the analyses suggest that microfinance banks in Nigeria improve their performance level by adjusting their business model using a series of business model innovation activities (value proposition (VP), value creation architecture (VCA), and financial value (FV)). The three dimensions of business model innovation activities were all significant in the model summary. This shows that all the business model innovation activities contribute to impacting the bank's performance positively. Among the various business model innovation activities they engaged in, value proposition (VP) and value creation architecture (VCA) activities improve microfinance banks' performances, and the lowest activity changes occur in the financial value dimension. Hence, microfinance banks



are encouraged to engage more value proposition and value creation architecture activities to improve their performance.

Theoretical Implications

This study proves that business model innovation activities impact positively on Nigerian microfinance bank's performance. The results from the empirical analysis conducted in this research clearly verifies the proposed research hypotheses that the business model innovation activities of value proposition, value creation architecture, and financial value, all significantly positively influences the bank's performance. Thus, confirming business model innovation as a significant determinant of the Nigerian microfinance bank's performance. This study also shows in details how Nigerian microfinance banks improve their performance level by adjusting their business model through engaging in a series of activities. This study thereby fills a significant gap in understanding business model innovation and its key activities and the effect of business model innovation activities on a bank's performance. By analyzing BMI in an understudied industry context (i.e., microfinance banks), this study provides evidence of BMI activities in microfinance bank.

Managerial Implications

Since business model innovation activities are crucial to the survival and growth of the Nigerian microfinance banks, management officials of microfinance banks in Nigeria are encouraged to engage more in business model innovation activities to attain superior business performance. This study encourages managers ensure the establishment of a banking environment that allows business model innovation activities to occur. Hence, microfinance banks in Nigeria must create and adopt an organizational culture that will enable business model innovation activities to occur. This study also provides senior executives and other top management officials with series of BMI activities such as exploring and satisfying new customer needs, acquiring new target customers and also maintain the old ones, ensuring the benefits and value offered by the banks' products and services are perceived by their customers especially the price sensitive customers, gaining new business partners, modifying or introducing new revenue models, employing more qualified employees, organizing



trainings, seminars and webinars for employees, etc., to adjust their business model in a way to benefit the banks' performance.

LIMITATIONS AND FUTURE RESEARCH

This study has some limitations that offer more opportunities for further research. There was no contrast of banks' performance before and after the application of the business model innovation; hence, extended research to confirm this is pertinent.

The sample study used in this research is connected explicitly to the microfinance banking sector in the Nigerian context; discrepancies may exist in other contexts; hence, it might not be possible for this study to generalize our results. Also, the sample size used for the regression analysis was just enough to run the analysis; additional research on this topic with a larger sample size might be ideal to confirm the results provided in this study.

ACKNOWLEDGEMENTS

My acknowledgement goes most especially to my academic supervisor, Cao Wei, who made herself available in providing expertise and moral guidance towards the completion of this research. I also want to appreciate the top management officials in Nigerian microfinance banks that took great effort towards filling the questionnaire.

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