

## **Moderating Effect of Financial Regulations on the Relationship between Interest Rate and Access to Finance by Small and Medium Enterprises in Northern Nigeria**

**<sup>1</sup>Shittu Olabisi, <sup>1</sup>Sabari Mohammed Habibu, <sup>1</sup>Abdullahi Nasiru & <sup>1</sup>Sheikh Abdullah**

<sup>1</sup>ABU Business School, Ahmadu Bello University, Zaria, Kaduna State, Nigeria.  
Email: [olabisishiitu12@yahoo.com](mailto:olabisishiitu12@yahoo.com), [sabarihm@gmail.com](mailto:sabarihm@gmail.com), [elnasir@gmail.com](mailto:elnasir@gmail.com)  
[profsheikh@yahoo.com](mailto:profsheikh@yahoo.com)

### **Abstract**

This study investigated the moderating effect of financial regulations on the relationship between interest rate and access to finance by Small and Medium Enterprises (SMEs) in Northern Nigeria. To achieve this, cross-sectional research design was employed to collect data from the SMEs owners/managers in Northern Nigeria. Population of the study consisted of SMEs in the sixteen states of Northern Nigeria, including FCT. The study adopted stratified random sampling to select 493 respondents. Questionnaires were distributed and collected through the personally administered method. Only 425 copies of the questionnaires were considered usable out of the administered 493. A Partial Least Square Structural Equation Modeling (PLS-SEM) was used to analyse the data with the aid of SmartPLS 3.2.8 and to test the hypotheses of the study. The findings showed that interest rate had negative and significant effect on access to finance. The moderating effect of financial regulations was established to be significant. The study, therefore, concluded that effective implementation of financial regulation can improve access to finance by SMEs. Thus, the study recommended that CBN should continue to implement policies that will reduce interest rates to enable SMEs in Northern Nigeria access funds such as reduction in Monetary Policy Rate (MPR) and Cash Reserve Rate (CRR) and the open market operations.

**Keywords:** Financial Regulations, Interest rates, Access to Finance, Small and Medium Enterprises (SMEs) and Partial Least Squares – Structural Equation Modeling (PLS-SEM).

### **Introduction**

A moderating variable is an independent variable that affects the strength and or direction of the connotations between another independent variable and an outcome variable (Lai, 2013; Hair *et al*, 2017a). This study used financial regulation as a moderator to examine the relationship between interest rates and access to finance. Financial regulations are laws and rules that govern financial institutions. Regulation can, therefore, be an important factor in facilitating access to finance.

Financial regulation revolves around multiple-agency regulator model in Nigeria (Akujuobi, Anyanwu & Eke, 2021). The three major financial sector activities are regulated by Central Bank of Nigeria (CBN) and Nigeria Deposit Insurance Corporation (NDIC) jointly regulate Banks, National Insurance Commission (NAICOM) regulates insurance companies and

Securities, and Exchange Commission (SEC) regulates securities firms. The banking sector is a segment of the financial system that primarily engages in financial intermediation and extension of credit facilities to creditworthy customers on short or long-term basis. The ability of financial institutions to transfer financial resources from surplus idle sectors to deficit real sectors for investment, growth, and development, makes financial intermediation a veritable process (CBN, 2017), and hence the need for periodic regulation of the financial sector. Without effective regulation, financial systems can become unstable, triggering crises that can destroy the real economy as evidenced by the Global Financial Crisis which began in 2007 (Spratt, 2013). Financial regulation particularly in the banking sector is the sole responsibility of the CBN. Hence this study focus is on CBN as the financial regulator.

Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets. High interest rate on credit may discourage SMEs from borrowing therefore reducing SMEs access to credit. Access to finance is vital to the survival of all businesses particularly SMEs, which are the backbone of all economies and drivers of economic growth and development (Oke, Uthman & Ademokoya, 2020).

SMEs play a vital role in economic development as they are considered globally as engine of growth (Awani, 2020). This is due to their ability to create jobs, alleviate poverty, address income inequality, and provide depth to the industrial base of the economy (Motilewa, Worlu, Ogbari & Aka, 2015). Despite their importance, access to finance has been observed to be the main challenge for their growth with risk premiums on their borrowing and elevated transactions costs as main obstacles. According to Price Waterhouse Coopers (PWC) 2020 survey, half of the businesses in Nigeria that applied for loan in 2020 turned it down because the cost was too high. Thus, scholars as well as those specifically involved within that sector, have been interested in seeking ways to improve the financial sustainability of SMEs (Islam & AbdWahab, 2021; Tuffour, Amoako & Amartey, 2020).

Many studies, therefore, reported interest rate as a major factor that deter the flow of credit from banks and other financial institutions to SMEs (de Moraes, Galvis-Ciro & Gargalhona, 2021; Torfs, 2020). Studies like Nanyondo, Tauringana and Mullineux (2017) and Ademosu and Morakinyo (2021) established the relationship between interest rate and financial access by SMEs as statistically significant and negative. This implied that as interest rates increase access to finance reduces. In contrast, Sawaya and Bhero (2017) in their studies found that high interest rates do not necessarily affect demand for credit; thus, established that there was no significant relationship between interest rates and access to finance. However, these studies focused mainly on the challenge of interest rates without introducing a moderating variable to the relationship. Some of the studies were mostly limited to one sector such as agriculture and tend to be specific. For example Opoku-Mensah and Agbekpurnu, (2016) and Chowdhury and Alam (2017).

Although these studies found the existence of relationships between access to finance and interest rate, the studies reported some inconsistencies. Some of these studies reported positive

relationships such as Nanyondo *et al* (2017), Tewodros (2017), Asongu and Odhiambo (2018). However, some studies reported negative relationship (Adegbite & Alli, 2021; Qubbaja, 2019) while studies like Rahman *et al* (2017) and Sawaya and Bhero (2017) did not establish any relationship among the variables. Since the studies reported inconsistencies, there is need for moderation as recommended by Baron and Kenny (1986) and cited in (Pardo & Román, 2013). This study considered financial regulation to moderate the relationship between the dependent and independent variables. This is in line with the recommendation of Spratt (2013), that financial regulation is expected to moderate the relationship between predictors of loans and access to finance. This tallied with the study of Brunnermeier, Crockett, Goodhart, Persaud and Shin (2009) which argued that financial regulation could serve as a moderator. Earlier, Baron and Kenny (1986) revealed that a moderator is necessary where inconsistencies exist in the relationship found among variables.

Furthermore, financial regulation is vital to the operations of financial institutions (Brunnermeier *et al*, 2009) particularly commercial banks and Micro Finance Banks (MFBs). Consequently, this study envisaged that financial regulation could play a significant role on the relationships between interest rate and access to finance (Dagogo, 2020). Therefore, this study seeks to establish the moderating effect of financial regulation on the relationship between interest rate and access to finance by SMEs in Northern Nigeria. Also, many of the studies used Ordinary Least Square (OLS) which could lead to over or under estimation. These studies include and not limited to Adegbite and Alli (2021), Nwokediuko *et al* (2019) and Thuku (2017). To overcome this weakness therefore, this study proposes the use of Partial Least Square – Structural Equation Modeling.

Consequent upon the above highlighted gaps, the main objective of this study, therefore, is to examine the moderating effect of financial regulations on the relationship between interest rates and access to finance by SMEs in Northern Nigeria. The specific objectives are as follow:

- i. To determine the relationship between interest rate and access to finance by SMEs in Northern Nigeria.
- ii. To examine the moderating effect of financial regulations on the relationship between interest rate and access to finance by SMEs in Northern Nigeria.

To address the above objectives, the following hypotheses were formulated and stated in null form:

H<sub>01</sub>: - There is no significant relationship between interest rate and access to finance by SMEs in Northern Nigeria.

H<sub>02</sub>: -Financial regulations do not moderate the relationship between interest rate and access to finance SMEs in Northern Nigeria.

## **Literature Review**

Omankhanlen, Okorie and Taiwo (2015) investigated the effects of Monetary Policy on Loan Risk Exposure of Commercial Banks in Nigeria. The study was carried out with OLS multivariate regression perception with the use of Vector Error Correction Model (VECM) framework. The result of the study reveals that lending rate does not play significant role in support of loans and advances. However, monetary policy rate revealed that the most significant effect on commercial banks loans and advance. This means that monetary policy rate is a competent parameter in measuring the performance of banks in the allocation of their credit facilities. The study, therefore, suggested that the monetary authorities give opportunity for the full interplay of the market forces of supply and demand in the allocation of credit. This interplay should be closely monitored to prevent banks from creating artificial scarcity of funds to hike their lending rate.

Furthermore, Yunusa, Williams and Adegbenle (2020) examined the impact of monetary policy on bank lending in Nigeria for the periods of 1980 to 2018. The data used for this study is mainly secondary data and time series from 1981-2018, which was obtained from the Central Bank of Nigeria (CBN) and the World Bank Development Index (WDI). Bank loan is proxy by commercial bank loans and advances which is the dependent variable while the independent variables are inflation rate, interest rate, foreign exchange rate, liquidity ratio, and money supply growth. The study makes use of inferential analysis with the Phillips-Perron test (P-P) for unit root and the Autoregressive Distributed Lag (ARDL) to determine the existence of a long-run relationship among the variables. The error correction model (ECM) was also used to determine the short-run relationship between the dependent and independent variables. The long-run result revealed that inflation rate and interest rate have significant and negative effect on loans and advances; the exchange rate have a positive and significant effect on loans and advances while liquidity ratio and money supply have a negative but insignificant effect on loans and advances.

Olatunji and Ibukun-Falayi (2018) assessed the effects of interest rate regulation on credit extension to SMEs in Nigeria in a twenty-year period (1994-2013). Secondary data obtained from CBN statistical bulletins, National Bureau of Statistics and National Association of Small-scale industrialists which showed the average interest rates for the period of study and the trend of loans extended to SMEs. The relationship between regulated interest rates and credit extended to SMEs is examined using Pearson Product Moment Correlation Coefficient (PPMCC) and OLS regression. The findings showed a positive but weak correlation between both variables. It was concluded that interest rate regulation does not have any significant effect on credit extended to SMEs. The study, therefore, recommended among other things that interest rate should be complemented with effective credit guarantee scheme, subsidized interest rates, and adequate financial education by regulators.

Obianuju, Emejulu and Okpaladinobi (2016) examined the extent to which interest rate affects banks investment with reference to First Bank Nigeria Plc and United Bank for Africa Plc.

Diagnostic survey research design was used in this study. Time series data were obtained from CBN statistical bulletin, journals, and publications from First Bank Plc and United Bank for Africa Plc. Data were analyzed using OLS for regression. The finding of the study showed that interest rate has a negative influence on investment. The study concluded that regulation of interest rate has significant negative effects on bank operations and global firms' investment.

Adebite and Alli (2021) investigated the effect of micro financing interest rate on small and medium scale enterprises growth in Lagos and Ogun State, Nigeria. Primary data was employed using structured self-administered questionnaire with five-point Likert scale. The study adopted a descriptive survey research design. Taro Yamane's sampling technique was used to select 400 SMEs from the total population of 13,457 in Lagos and Ogun States, while stratified and proportionate sampling methods are used to determine the sample size of 348 SMEs in Lagos state and 52 in Ogun state. Ordinary Least Square Regression (OLS) was used to estimate the regression. The results from the hypothesis tested revealed that a significant negative relationship existed between micro finance interest rate and SMEs growth in Nigeria.

Rahman, Rahman, and Belas (2017) investigated the determinants of access to finance for small and medium enterprises (SMEs) in the context of three Central European countries: Czech Republic, Slovak Republic, and Hungary. The data set for the research was obtained from the BEEPS survey, which is conducted by the World Bank and the European Bank for Reconstruction and Development. The study analysed the determinants of access to finance for SMEs at each country level for an in-depth understanding of country-level variations in SME financing. The findings showed that the interest rate is statistically significant for the SMEs and micro-firms. This indicates that as the rate of interest increases, the loan size increases. It could mean that the higher the amount of loan the higher the risk. Therefore, banks may impose a higher interest rate as the loan size increases.

Aikor and Cephas (2018) examined the relationship between access to credit and SMEs growth in Gboko metropolis of Benue State. The research design adopted for the study was descriptive survey with a population of 102 SMEs and a sample size of 102 SMEs through census sampling technique. Primary data was collected via the researcher's designed questionnaire. The study used regression analysis to test the hypotheses with the aid of Statistical Package for Social Sciences (SPSS). The study showed that access to credit has a negative relationship with loan interest rate. It concludes that the bigger the size of a firm and the closer firm's relationship with a financial institution the higher its chances of accessing credit, while high loan interest constrains access to credit.

Chilembo (2021) examined some factors that affect Small and Medium Enterprises (SMEs) access to finance in Lusaka. The study research questions were formulated to find out the extent to which collateral and interest rates affect access to finance and what other factors do SMEs consider as affecting their access to finance. The study used a mixed method approach (Qualitative and Quantitative research methods) to come up with the study findings. The study

shows a positive correlation between lack of collateral assets and rejection of credit. The result also showed a positive correlation between interest rate and access to finance. Based on the findings, the study recommends use of practical and unconventional means of alternative sources of finance such as Crowd funding also called “Village Banking” by SMEs.

Contrary to the previous studies above, Sawaya and Bhero (2017) conducted a study on interest rates: a deterrent to SMEs growth in Mozambique. The study involved 485 sampled SMEs from a population of SMEs in Maputo city representing Mozambique as a whole. Maputo, the capital of Mozambique was chosen as the nucleus of the study, because Maputo is the main centre of economic activities of the country. The sample was chosen using simple random sampling strategy. The study used structured questionnaires to conduct face to face interview to collect primary data. The study found that most of the SMEs that benefited from financial support did not find high interest rates as a major stumbling block.

The result of past studies has shown that interest rates affect SMEs ability to access credit (Chilembo, 2021; Rahman, Rahman & Belas, 2017). However, some of the studies were either conducted using only one state or local government such as Adegbite and Alli (2021), Aikor and Cephas (2018). These studies focused mainly on the challenges of interest rates without comparable variables. Enlarging the scope of the study will be more robust and reliable. This study, therefore, argues that interest rate is a major constraint in accessing finance by SMEs. This argument is line with the findings of de Moraes, Galvis-Ciro and Gargalhona (2021); Torfs (2020).

### **Methodology and Measures**

The study employed positivism research paradigm and quantitative research approach since the objectives of the study were to be tested by hypotheses. Also, cross sectional survey design was employed with data collected through questionnaire. Out of 493 copies of the administered questionnaires, only 425 were found useful. Before the self-administration of questionnaire, the SMEs were informed about the purpose of the research and were assured of its voluntary and confidentiality nature, this according to (Podsakoff, MacKenzie, Lee & Podsakoff, 2003) minimized the effect of common method biases. Prior to the main analysis, the study ensured assumptions about outlier check, normality, and multicollinearity (Hair, Hult, Ringle & Sarstedt, 2017b). After successfully satisfying all assumptions, the study adopted the partial least squares (PLS) path modeling method. The research model depicted in figure 1 was tested using Partial Least Square (PLS) path modeling. The method was used because the study was aimed at predicting the dependent variable (Duarte & Raposo, 2010) and PLS was also a non-parametric technique (Ruiz, Mujica, Berjaga & Rodellar, 2013). To validate and evaluate the research model, Hair, Sarstedt, Ringle, and Gudergan (2017a) suggested using two stages of evaluation. They are measurement models (also called external models in PLS-SEM) and structural models (also called internal models in PLS-SEM).

### Data Preparation and Analysis

The owners-managers of SMEs were given a total of 493 copies of the questionnaire and only 425 copies were returned, screened, and found useful. To calculate the measurement and structural model, the study used SmartPLS version 3.2.8. (Anderson & Gerbing, 1988). One of the advantages of employing PLS was its ability to estimate the links between variables as well as indicators and their link with other variables. It also uses a bootstrapping approach to generate statistically reliable estimates of interaction effects, which may lower the potential relationship while boosting the theory's validity (Allard, Henseler, Ildikó & Zuzana, 2016; Hair et al, 2017a).

### Measurement Model Results

According to Hair et al (2019), the evaluation of measurement model begins with the size and significance of the loadings, reliabilities, and then convergent and discriminant validity. According to Hair et al (2017b) Average Variance Extracted (AVE) is 0.5 and Composite Reliability (CR) is 0.7, while the indicator reliability depends on what improve the AVE or CR. Therefore, the validity and reliability result are presented in figure 2 and Table 1 as follows:

Table1: Measurement Model

Constructs	Indicators	Outer loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Access to finance	AFIN1	0.94	0.97	0.97	0.88
	AFIN2	0.95			
	AFIN3	0.95			
	AFIN4	0.93			
	AFIN5	0.91			
Financial Regulations	FRG2	0.90	0.92	0.94	0.81
	FRG3	0.90			
	FRG4	0.91			
	FRG5	0.88			
Interest	INTR1	0.67	0.82	0.88	0.65
	INTR3	0.87			
	INTR5	0.86			
	INTR7	0.81			

As revealed in Table 1 above, the indicator reliability was achieved for all the constructs because deleting any item will not increase the AVE or the CR as suggested by (Hair et al, 2017b). Also, the AVE values of all the constructs were greater than 0.50, with consistent

composite reliability values also greater than 0.70 indicating that the items employed in the study measure the constructs and as well show an attainment of convergent validity. Therefore, indicator loadings, AVE and CR in this study are achieved as recommended by Hair *et al* (2017b).

Furthermore, to determine the discriminant validity, Duarte and Amaro (2018) proposed the use of Heterotrait-Monotrait Ratio (HTMT) method as the best for evaluating discriminant validity compared to Fornell-Larcker criterion and cross-loading. Therefore, the recommended thresholds of HTMT value should be 0.85, 0.9 or 1 (Henseler *et al*, 2015). Thus, the discriminant validity of this study had achieved as specifically indicated in table 2 that all the values are below the recommended thresholds.

Table 2: Discriminant Validity (Heterotrait-Monotrait Ratio (HTMT) (n=425)

Indicators	AFIN	FRG	INTR
AFIN			
FRG	0.77		
INTR	0.46	0.47	

### Structural Model Results

After successfully validating the instruments in the measurement model, the next is to assess the structural model by applying bootstrapping technique with 5,000 samples to ascertain the significance levels of the direct and moderating relationships (Hair *et al*, 2017a). These include the hypotheses testing, evaluation of R-square, effect size and predictive relevance.



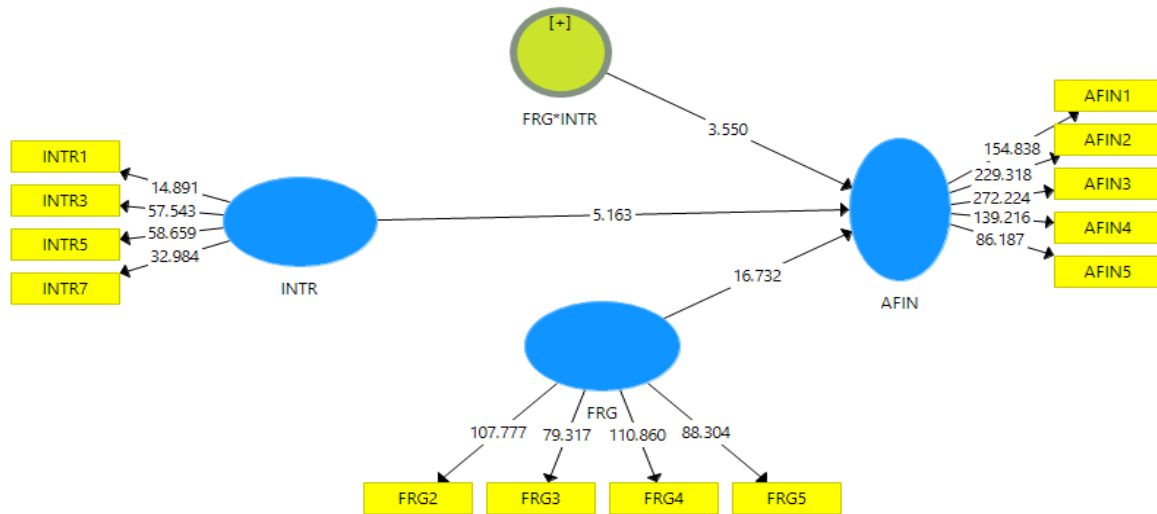


Figure 3: Bootstrapping for Direct and Moderation

Table 3: Structural Model

Relationship	Beta Values	Standard Deviation	T Statistics	PValues
FRG -> AFIN	0.62	0.04	16.73	0.00
FRG*INTR -> AFIN	0.13	0.04	3.55	0.00
INTR -> AFIN	-0.19	0.04	5.16	0.00

Table 3 above presents the results of direct and moderation relationships of the study. Specifically, the finding for the direct relationship between FRG -> AFIN, revealed a positive and significant relationship with ( $\beta = 0.62$  and  $P=0.00$ ). In addition, the finding for the direct relationship between INTR -> AFIN, revealed a negative and significant relationship with ( $\beta = -0.19$  and  $P=0.00$ ). Equally, the finding of moderation relationship between FRG\*INTR -> AFIN demonstrated a positive and significant relationship ( $\beta = 0.13$  and  $P = 0.000$ ).

The coefficient of determination ( $R^2$ ) of endogenous constructs is another criterion for evaluating structural models (Hair *et al*, 2017a). The  $R^2$  values of 0.19, 0.33, and 0.67 are considered weak, moderate, and substantial (Chin, 1998).

Table 4: Coefficient of Determination ( $R^2$ ) for direct and Moderation Relationships

Construct	R-Square ( $R^2$ )
Access to Finance	0.551 (55.1%)

As presented in Table 4 above, the cumulative result of exogenous construct and the moderator explains 55.1% of the total variance on the endogenous construct (access to finance). Following Chin (1998) recommendations, the  $R$ -squared ( $R^2$ ) value explained by this exogenous construct and the moderator on the endogenous construct is moderate.

After determining the coefficient of determination ( $R^2$ ), the next step is to determine the effect size ( $f^2$ ). The  $f^2$  value provides an overview of the potential effect or impact of a particular exogenous variable on the endogenous variable.

Table 5: Effect Size for direct and Moderation Relationships: F-Square

Constructs	F <sup>2</sup>	Effect Size
FRG	0.633	Large
FRG*INTR	0.025	Small
INTR	0.056	Small

Table 5 above shows that FRG and INTR have large and small effect size on access to finance while the interaction between FRG\*INTR is found to have small effect on access to finance.

### Result of the Findings

The statistical analysis indicates that the effect of interest rate on access to finance is negative and significant. This implies that, the higher the interest rate, the more difficult it is for SMEs to access finance. Thus, an increase in interest rate will lead to decrease in access to finance. Therefore, the null hypothesis which states that there is no significant effect of interest rate on access to finance by SMEs in Northern Nigeria is rejected. The result is in line with Nanyondo *et al* (2017) and Adegbite and Alli (2021) that established a negative and significant relationship between interest rate and access to finance. The result is also supported by credit rationing theory which argues that an increase in interest rate reduces the expected rate of return for borrowers as demand for loan would fall. However, the higher the interests, the more banks are willing to lend because increasing interest rates yield more returns. The result, however, contradicts the studies of Sawaya and Bhero (2017) and Oaya and Mambula (2017) that indicated that interest rates do not have effect on access to finance.

The results also showed that the relationship between interest rate and access to finance is 0.17 for an average level of financial regulation. For higher levels of financial regulation (i.e. financial regulation is increased by one standard deviation unit), the relationship between

interest rate and access to finance increases by the size of the interaction term. This indicates that financial regulation changed the effect of interest rate on access to finance from negative to positive effect. Thus, the null hypothesis which states that financial regulations do not moderate the effect of interest rate on access to finance by SMEs in Northern Nigeria is also rejected. High interest rates increase transaction cost for SMEs, thus borrowing is low (Chilembo, 2021; Ademosu & Morakinyo, 2021). For instance, when Monetary Policy Rate (MPR) is reduced by CBN, it will put pressure on banks to lower cost of credit. This will make credit cheaper and improve demand for credit. Also, when CBN increased Cash Reserve Ratio (CRR), such a policy will reduce the lending capacity of banks, thereby leading to deposit drive and increase in interest rates by banks. This scenario will discourage SMEs from borrowing. Hence CBN as financial regulator should maintain a reduction in MPR and CRR as these policies will keep interest low and cost of obtaining loan will also reduce thereby encouraging SMEs to borrow. Furthermore, CBN should inject more funds into the banking sector through the Open Market Operations (OMO), thus reducing interest rates. Consequently, SMEs will be willing to borrow when interest rate reduces.

## **Conclusion**

This study examined the moderating effect of financial regulations on interest rate and access to finance. The study used quantitative research approach and cross-sectional survey to obtain data from a sample size of 425 owner/managers of SMEs across sixteen states in northern Nigeria. PLS path modeling was used to predict the dependent variable while Smart PLS 3.2.8 was used for the measurement and structural model. The bootstrapping approach generated statistically reliable estimates for the interaction effect. The study achieved both the AVE and CR. Meanwhile, the HTMT was within the recommended threshold.

The direct relationship showed that financial regulation and access to finance is positive and significant while that of interest rates and access to finance is negative and significant. Meanwhile, financial regulation moderated the relationship between interest rate and access to finance from negative significant to positive significant. The coefficient of determination ( $R^2$ ) for direct and moderation relationship explained 55.1% of the total variance. Thus,  $R^2$  is moderate.

The study concluded that interest rate has a negative and significant effect on access to finance and financial regulation as moderator improved the relationship between the independent and dependent constructs.

## **Recommendations**

Based on the findings of the study, the following recommendations are made;

- i. CBN as financial regulator should maintain reduction in MPR and CRR policies as these policies will reduce interest rates and encourage borrowing by SMEs in Northern Nigeria.

- ii. Furthermore, CBN should inject more funds into the banking system through the open market operations.

## References

- Adegbite, A & Alli, I (2021). Effect of Micro Lending Rate on SMEs Growth in Nigeria. *International Journal of Advanced Studies in Business Strategies and Management*, 9(1), 62-78
- Ademosu, A & Morakinyo, A (2021) Financial System and SMEs access to Finance: A Market Approach. *Studia Universitatis Vasile Goldis, Arad- Seria Stiinte Economice*, 3, 21-36
- Anderson, J & Gerbing, D (1988) Structural equation modeling in practice: A review and recommended two- step approach. *Psychological Bulletin*, 103(3), 411-423
- Aikor, S & Cephas, G (2018) Effect of Credit on Small and Medium Enterprises growth in Gboko Metropolis Benue State. *Bingham Journal of Economics and Allied Studies*, 2(1)
- Akujuobi, N.E., Anyanwu, G.I., Eke, C.K (2021). Regulatory Framework and Bank Operations in Nigeria: a VECM Approach. *International Journal of Development and Management Review* 16(1), 148-160
- Allard, C.R., Henseler, J., Ildikó, K., and Zuzana, S (2017) Estimating Hierarchical Constructs using consistent Partial Least Squares. The case of second – order composites of common factors. *Industrial Management and Data Systems* 117(3), 459-477 Emerald Publishing Limited.
- Asongu, A.S. & Odhiambo, N.M. (2018). Information Asymmetry, Financialisation and Financial Access. *International Finance Journal*, 21(3), 297-315.
- Awani, K. (2020). Factoring as an Alternative Tool for Financing SMEs in Africa. Inter-African Trade Initiative, AfrexinBank.
- Baron, R.M. and Kenny, D.A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51( 6), 1173-1182.
- Brunnermeier, M., Crockett, A., Goodhart, C., Persaud, A.V. & Shin, H.S. (2009). The fundamental principles of financial regulation. Geneva report on the world economy. International center for monetary and banking studies (ICMB). British Library.
- Central Bank of Nigeria (2017). The Nigerian Financial System at a glance.

- Chilembo, T. (2021) A Study of the Factors Affecting Small and Medium Enterprises (SMEs) Access to Finance. A Case of Lusaka Based SMEs. *American Journal of Industrial and Business Management*, 11, 437-460.
- Chin, W.W. (1998). The partial least squares approach to structural equation modeling. In G. A.
- Marcoulides (Ed.), *Modern Methods for Business Research* (pp. 295–336). New Jersey: Lawrence Erlbaum associates Publishers.
- Chowdhury, M. & Alam, Z. (2017). Factors affecting access to finance of small and medium enterprises (SMEs) of Bangladesh. *USV Annals of Economics and Public Administration*, 2(26), 55-68
- Dagogo, D.W. (2020). Government, bank, and private capital financing of entrepreneurial firms in Nigeria. In *entrepreneurial finance in emerging markets* (pp. 361-372). Palgrave Macmillan, Cham.
- De Moraes, C., Galvis-Ciro, J. C., & Gargalhona, M. (2021). Financial access and interest rate Spread: An international assessment. *Journal of economics and business*, 114, 105958.
- Duarte, P. & Amaro, S. (2018). Methods for Modelling Reflective-Formative Second Order Constructs in PLS: An Application to online Travel Shopping. *Journal of Hospitality and Tourism Technology*, 9, 295-313.
- Duarte, P.A.O. & Roposo, M.L.B. (2010). A PLS model to study Brand Preference: An Application to the Mobile phone market. In V. E. Vinzi, W. W. Chin, J. Henseler, & H. Wang (Eds.), *Handbook of partial least squares: concepts, methods and applications* (pp. 449–485). Berlin: Springer-Verlag Berlin Heidelberg. doi:10.1007/978-3-642-16345-6
- Hair, J.F., Risher, J.J., Sarstedt, M. & Ringle, C.M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24.
- Hair, J.F., Jr, Sarstedt, M., Ringle, C.M. & Gudergan, S.P. (2017a). *Advanced Issues in Partial Least Squares Structural Equation Modeling*. 1<sup>st</sup> ed., Sage Publications, Los Angeles.
- Hair, J.F., Jr, Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2017b). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. 2<sup>nd</sup> ed., SAGE Publications, Inc., Thousand Oaks CA.

- Henseler, J., Ringle, C.M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135.
- Islam, A. and AbdWahab, S. (2021). The intervention of strategic innovation practices in between regulations and sustainable business growth: a holistic perspective for Malaysian SMEs. *World Journal of Entrepreneurship, Management, and Sustainable Development*, 11(1): 1-26.
- Lai, Y.H. (2013). ‘The Moderating Effect of Organizational Structure in Knowledge Management for International Ports in Taiwan’, *International Journal of Computer and Information Technology*, 2(2); 240-246.
- Motilewa, D.B., Worlu, R.E., Ogbari, M.E. & Aka, D. (2015). A Review of the Impacts SMEs as Social Agents of Economic Liberations in Developing Economies. *International Review of Management and Business Research*, 4(3), 903-914.
- Nanyondo, M., Tauringana, V. & Mullineux, A. (2017). Access to Finance by SMEs and its Determinants in Uganda: A comparison of measurement approaches. Retrieved on line [http://www.academia.edu › Access\\_to\\_finance](http://www.academia.edu › Access_to_finance)
- Nwokediuko, O., Ikeora, J., & Atueyi, C. (2019). Effect of Financial Regulation on Economic Growth in Nigeria. *International Academy Journal of Management, Marketing and Entrepreneurial Studies* 7(1), 65-78.
- Oaya, Z, & Mambula, C (2017). The impact of SMEs financing on business growth in Nigeria: A Study of Keffi and Mararaba Metropolis. *International Journal of Innovation and Economic Development* 3(2), 44-55
- Obianuju, C., Emejulu, G., and Okpaladinobi, T. (2016) Government Regulations and Survival of Global firms in Nigeria (1990-2014). *European Journal of Business, Economics and Accountancy*, 4(7), 2056
- Oke, L.A., Uthman, A.B. & Ademokoya, A.A. (2020). Owner Characteristics and Access to Bank Financing: Perceptual Evidence From SMEs in North Central Nigeria. *Journal of Economics and Business*, 13(1), 45-62.
- Olatunji, T.E., & Ibukun-Falayi, O. (2018). The effect of interest rate regulation on credit extension to SMEs in Nigeria. *International Journal of Research in Business Management*, 6(5), 17-30

- Omankhanlen, E., Okorie, U. & Taiwo, N. (2015). A Dynamic Analysis of the Relationship between Monetary Policies and Loan Risk Exposures in Nigerian Deposit Money Banks. *Mediterranean Journal of Social Sciences* 6(6), 247-255.
- Opoku–Mensah, S. & Agbekporu, H. (2016). Determinants of Access to Credit by Agribusiness Operators in the Kumasi Metropolis, Ghana. *American Journal of Experimental Agriculture*, 6(5), 333–346.
- Pardo, A. & Román, M. (2013). Reflections on the Baron and Kenny Model of Statistical Mediation. *Anales de Psicología*, 29(2):614-623.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y., & Podsakoff, N.P. (2003). Common Method biases in Behavioural Research: A Critical Review of the Literature and Recommended Remedies. *The Journal of Applied Psychology*, 88(5), 879–903. doi:10.1037/0021-9010.88.5.879
- Price Waterhouse Coopers (PWC)(2020). MSME Survey 2020 Building to Last.
- Qubbaja (2019). Access to Finance for Women-Owned SMEs in Palestine. *Research Journal of Finance and Accounting* 10(8)
- Rahman, A., Rahman, T. & Belas, J. (2017). Determinants of SME Finance: Evidence from Three Central European Countries. *Review of Economic Perspectives* 17(3), 263-285
- Ruiz, M; Mujica, L; Berjaga, X & Rodellar, J (2013). Partial Least Square/Projection to Latent Structure Regression to Estimate impact localization in Structures. *Smart Materials and Structures* 23 (2)
- Sawaya, A & Bhero, S (2017) Are Interest Rates a Deterrent to SMEs Growth in Mozambique? *European Journal of Business and Management* 9 (29), 33-41
- Spratt, S. (2013). Financial regulation in low-income countries: Balancing Growth with Stability. Unpublished work
- Tewodros, B.A (2017) Factors affecting access to Finance for Micro and Small Enterprises: The case of West Hararghe Zone, Ethiopia. *International Journal of Current Research*, 9(11), 86-93
- Thuku, A. G. (2017). Factors Affecting Access To Credit By Small and Medium Enterprises in Kenya: A Case Study of Agriculture Sector in Nyeri County. *Being unpublished work*

Torfs, W. (2020). The EIF SME Access to Finance Index-September 2020 Update, EIF Working Paper No. 2020/68, European Investment Fund, Luxembourg. Retrieved on line [https://www.elf.org\\_centre/publications/ELF\\_working\\_paper\\_2020\\_68](https://www.elf.org_centre/publications/ELF_working_paper_2020_68)

Tuffour, J. K., Amoako, A. A. and Amartey, E. O. (2020). Assessing the effect of financial literacy among managers on the performance of small-scale enterprises. *Global Business Review*, 10(2): 1- 18

Yunusa, L., Williams,T., & Adegbenle, O (2020). Monetary Policy and Bank Lending in Nigeria. *Global Journal of Human-Social Science*, 16(1), 113-129