

Demand-Side Factors And Financial Inclusion Of Micro, Small And Medium Enterprises In Southwest, Nigeria

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Abstract

The study examined the connection between demand-side factors and financial inclusion of Micro, Small and Medium Enterprises (MSMEs) in Southwest, Nigeria. The population of the study comprised MSMEs and Deposits Money Banks (DMBs). The study adopted survey research design and employed a multistage sampling procedure to collect data with the aid of structured questionnaires. Data were analysed using descriptive and inferential statistics. Partial Least Square-Structural Equation Modeling (PLS-SEM) was used for the latter. Descriptive analysis results showed that financial literacy, having a bank account and bank proximity were the leading demand-side factors that might enhance MSMEs' financial inclusion. Empirically, findings showed that demand-side factors had positive and significant influence on the financial inclusion of MSMEs in the study area. Specifically, Automatic Teller Machine (ATM) usage was identified as a strong indicator of financial inclusion of MSMEs. In conclusion, the study highlighted the critical role of demand-side factors in enhancing MSMEs' financial inclusion while it recommended increasing the availability of ATMs, among others, with a view to enhancing financial inclusion of MSMEs in the study area.

Keywords: *Financial Inclusion, Demand-Side Factors, Micro, Small and Medium Enterprises, Southwest, Nigeria*

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I. Introduction

Financial inclusion is increasingly gaining traction among policy makers, financial institutions and entrepreneurs, more importantly because access to finance has since been recognised as a crucial element in the development of MSMEs. However, towards addressing the finance dilemma of the unbanked and low-income population with a view to unlocking the social and economic potentials of unbanked households and MSMEs, policy makers changed their focus from financial development to financial inclusion (Adeoye, 2016; FinMark Trust & United Capital Development Fund (UNCDF), 2020; Johnson & Arnold 2012; Olaniyi & Ibor et al., 2017; Triki & Faye, 2013). Financial inclusion, according to Vo, Nguyen and Van (2021), refers to the ability of both businesses and individuals to access and use financial services. Financial inclusion is foundational to the development of the financial system, as it not only reflects financial progress but also financial knowledge (Chuc et al., 2022; Emara & El Said, 2021). It encompasses a range of initiatives aimed at making formal financial services available, accessible, and affordable to all segments of the population (Triki & Faye, 2013).

Research has underscored the critical role played by MSMEs in driving economic growth in developing nations. They are recognized as vital contributors to fostering inclusive and sustainable economic development, improving overall quality of life, stimulating domestic economic activities, and job creation as small firms produce nine out of ten new jobs globally, promoting industrialisation, fostering innovation, and enhancing prosperity (Bassey *et al.*, 2017; Moritan, 2020; United Nations, 2019). As part of the fundamental elements in the development of financial inclusion, access to finance is a leading factor influencing the growth and expansion of Micro, Small and Medium Enterprises (Ibor *et al.*, 2017; Triki & Faye 2013). However, in the context of Nigeria, the case is different and even more worrisome. An investigation conducted by the Enhancing Financial Innovation and Access (EFInA) revealed that Nigeria has the highest proportion of financially excluded adults, accounting for about 41.6% of the population, compared to 39.0% in Burkina Faso, 11.0% in Rwanda, and 17.0% in Kenya (EFInA, 2016). Similarly, a recent study showed that Nigeria's percentage of financially excluded adults is approximately 37%, significantly higher than South Africa's 7% (EFInA, 2018). This indicates that Nigeria faces a greater challenge of financial exclusion compared to other African countries. Towards mitigating this challenge, the Nigerian government has implemented a plethora of initiatives, programmes and policies to promote MSMEs

easy access to finance. Notwithstanding the efforts, the percentage of MSMEs that are not able to access finance remains significant (EFInA, 2020).

Existing studies on the determinants of financial inclusion have primarily focused on supply-side of inclusion and have not adequately explored the demand-side factors relevant to MSMEs, such as individual consumer capabilities, including financial self-efficacy, financial attitude, financial literacy, saving habits, frequency of account usage, and frequency of debit card usage on ATMs and POS terminals, among others. Besides, scholars on determinants of financial inclusion hardly separate demand side from supply side (Abdulrahman & Olofin, 2017; Bassey *et al.*, 2017; Okoye, *et al.*, 2017; Okoroafor *et al.*, 2018). Mukhopadhyay (2016) pointed out a significant limitation of relying solely on supply side data to measure financial inclusion. The study argued that such an approach might overestimate financial inclusion due to individuals holding multiple bank accounts and, moreover, it lacks insight into the extent of financial services usage.

It is against this backdrop that the study investigated the effect of demand-side factors on financial inclusion of MSMEs in the study area. Findings from this study would contribute to the literature on determinants of financial inclusion, and enable policymakers take more informed decisions on financial inclusion strategies.

Succeeding this introduction, the remainder of this paper is organised thus: Section two deals with a review of the literature while section three addresses the methodology of the study. Section four presents the results and discusses findings of the study. Finally, section five addresses the conclusion and recommendations.

II. Literature/Theoretical Underpinning

Theoretical Review

The study's theoretical framework was grounded in McKinnon (1973) and Shaw (1973) earlier research on financial inclusion. This foundation is built upon the understanding that financial liberalisation is viewed as a cornerstone of economic reforms in underdeveloped nations while in certain economies, the adoption of financial inclusion policies has provided low-income people with essential support in gaining access to financial services. Moreover, financial inclusion is a useful instrument for lessening the negative consequences that macroeconomic shocks have on MSMEs and households. By encouraging entrepreneurs to increase production through the facilitation of higher household savings, financial inclusion promotes economic growth. Financial inclusion is also an important tool for fostering inclusive economic development since financial products also directly contribute to economic growth. Theoretically, credit extension to enterprises is a crucial conduit via which finance fosters growth. Enterprises that have more financial resources available to them are more likely to thrive and expand quickly (Adelino *et al.*, 2017).

Olawale and Garwe (2010) contend that a large concentration of low-productivity occupations in the micro and informal sectors can be partially explained by Sub-Saharan Africa's limited access to financial services. The impoverished and microenterprises that are limited by a lack of collateral, credit histories, and connections will be forced to rely on their meagre resources and income in the absence of an inclusive financial system (Beck *et al.*, 2009). A variety of indicators are frequently used in the literature on financial inclusion to analyse the level of financial inclusion. The presence and accessibility of financial institutions, financial services, and products, especially in the area of banking, relate to the supply side. Conversely, metrics such as product acceptance, bank account ownership by individuals and businesses, account usage frequency, and frequency of debit card usage at ATMs and Point of Sale (POS) terminals, among other things, relate to the demand side of financial inclusion (Datta & Singh, 2019).

Empirical Review

Kundu (2015) identified the demand-side challenges in the current model of financial inclusion and proposed ways to address them. The study emphasized that lower costs and stability in financial inclusion could be achieved by addressing demand-side issues. Kundu examined successful global financial inclusion models like BRADESCO in Brazil, MPESA in Kenya, Rakyat Bank in Indonesia, Mzansi accounts in South Africa, and Grameen Bank in Bangladesh to understand what made them successful in their businesses. It was observed that although governments had made significant efforts to expand banking access, demand-side issues had not been adequately addressed, resulting in limited usage of financial products. Efobi *et al.* (2014) micro-econometric analysis of the effects of bank service utilisation and access on financial inclusion in Nigeria raised similar conclusions. The usage of bank services as indicated by account ownership at formal financial institutions, the use of the account for saving, and the frequency of withdrawals were the three factors that the authors took into consideration when measuring financial inclusion. According to the study, a few personal factors, like age, income level, and propensity for using ICT, have big impact on how easily people in Nigeria can access and use bank services.

Lanie (2017) examined demand-driven determinants and self-reported barriers to financial inclusion in the West African Economic and Monetary Union (WAEMU). He emphasized that while financial inclusion is a priority in WAEMU, the region lags behind Sub-Saharan Africa and Asian benchmark countries in several

dimensions of financial inclusion. The study identified factors crucial for financial inclusion in WAEMU and investigated whether these factors were associated with self-reported barriers to financial inclusion using data from the 2014 Gallup World Poll Survey. The results indicated that variables such as age, gender, employment status, educational attainment, and income were all determinants of financial inclusion in WAEMU. Moreover, educational level and income were found to be the primary factors affecting the likelihood of reporting a barrier to financial inclusion in the region.

Prabhakar and Satyanarayana (2019) examined the financial inclusion dimensions from the beneficiaries' (demand-side) point of view with the objective of assessing the impact of financial inclusion on socio-economic status of primitive tribal groups (PTGs) in India. The study identified five dimensions for assessing financial inclusion from a demand-side viewpoint using an exploratory factor analysis. Physical closeness, availability, accessibility, affordability, and usage were the dimensions identified. It was found that the socioeconomic level of the beneficiaries is significantly impacted by financial inclusion, which is represented by these criteria. Ramakrishma and Trivedi (2018) aimed to empirically assess the relative contribution of demand-side factors to financial inclusion. The study, using exploratory factor analysis, revealed that factors such as the perceived benefits of having a bank account, usage of bank accounts, and banking outreach significantly influenced financial inclusion. Yangdol and Sarma (2019) used the World Bank's Global Findex database from 2014 to analyze the demand-side variables influencing financial inclusion in 142 countries. They found that while higher income and educational attainment enhanced an individual's level of financial inclusion, being a woman, not educated, unemployed were correlated with being poor.

III. Methodology

The study adopted survey research design and made use of structured questionnaire. The population of the study consisted of MSMEs as well as Deposits Money Banks (DMBs) in selected four states of Southwest, Nigeria. The study adopted the multistage sampling procedure. Firstly, purposive sampling technique was used to select four states in the region, namely; Lagos, Ogun, Ondo, and Oyo states. Secondly, purposive selection of the state capitals and three towns other than the state capitals (one per senatorial district). Thirdly, purposive selection of Head of Retail Operations per branch in 10 DMBs while in the fourth stage, stratified sampling technique was adopted for the selection of MSMEs and DMBs with a total of 666 and 498 sample sizes respectively, using Cochran (1977) formula for sample size determination. Two types of structured questionnaires were used. The study was descriptive in nature and analysed through the quantitative approach. Descriptive statistics such as mean ranking and relative importance index were used in the study. On the other hand, the modelling of structural equations by partial least square (PLS-SEM) was used as the estimation technique. This technique, over the last few years, has become increasingly used in the disciplines of social sciences, information system and business (Hair *et al.*, 2017). The analysis was conducted using Smart Partial Least Square (PLS) 2.0 M3 path modeling software. This software was instrumental in testing hypotheses, determining t-values, R-squared values, and p-values, facilitating informed decisions regarding the significance of the independent variables.

Model Specification

The model chosen for this study was the Partial Least Square-Structural Equation Model (PLS-SEM), which was utilised to determine the relationships and influence of demand-side factors on financial inclusion in Southwest, Nigeria as follows:

$$FINC = f(FLA, DOC, FAU, SAC, DIS, INT, ATM, AGE, EDU, SEX) \quad \dots (1)$$

Where;

FINC = Financial Inclusion

FLA = Financial Literacy/Awareness

DOC = Documentation required to open bank account

FAU = Frequency of Account Usage

SAC = Saving Culture

DIS = Distance to the nearest access point

INT= Internet Connectivity

ATM= ATM card usage

AGE = Age of owner/manager of MSMEs

EDU = Educational Level of owner/manager of MSMEs

SEX= Gender (Male/Female)

Econometrically;

$$FINC_i = \alpha_0 + \alpha_1 FLA_i + \alpha_2 DOC_i + \alpha_3 FAU_i + \alpha_4 SAC_i + \alpha_5 DIS_i + \alpha_6 INT_i + \alpha_7 ATM_i + \alpha_8 AGE_i + \alpha_9 EDU_i + \alpha_{10} SEX_i + \epsilon_i \quad \dots (2)$$

Where;

ϵ_i = Error term

IV. Results And Discussion

Descriptive Analysis of Demand-Side Factors of Financial Inclusion

The results for the descriptive statistics for demand-side factors are as presented in Tables 1 and 2. The result showed that the sixteenth (16th) items, cdsfi1 (our enterprise is aware of the various financial products available at our bank) has the highest mean (4.055), meaning that MSMEs under study were information-inclusive. Put differently, the findings showed that the respondents were financially literate or have access to financial information/knowledge that could enhance their financial inclusiveness. This finding aligns with that of Doris (2015) and Akileng, Lawino, and Nzibonera (2018) who pointed out that possessing financial literacy (knowledge about bank products and services) can enhance financial inclusion among households in Uganda. As a result, entrepreneurs with financial literacy are more likely to make well-informed decisions regarding new financial products and services. Additionally, respondents' recognition of the significance of opening a bank account, indicated by a mean score of 3.984, aligns with prior research suggesting that one of the demand-side factors contributing to financial inclusion is the perceived benefits of having a bank account (Ramakrishna & Trivedi, 2018). Third on the distribution is "distance to nearest bank branch (bank proxy) facilitates financial inclusion" (Cdsfi13) with the mean score of 3.898. This finding is in tandem with that of Lukman, Olufemi, and Babatunde (2017) which found that one of the factors affecting financial inclusion in Sub-Saharan African countries is bank proximity. Therefore, Tables 1 and 2 show that out of the 16 items used to examine demand-side factors influencing financial inclusion of MSMEs in the study area, these three items (cdsfi1, cdsfi3 and cdsfi13) were the critical factors.

Meanwhile, the cdsfi9 (our savings habit influences our usage of bank's products) has the lowest mean of 3.591 as depicted in Table 1. However, on the average, the frequency of the distribution as presented shows that the count skewed towards the 'agree' side with the mean score of 3.778. Therefore, judging by the average mean score, the finding shows that the respondents generally agree that these 16 items were potentially demand-side factors capable of influencing financial inclusion of MSMEs.

Table 1: Frequency Distribution of Demand-Side Factor Items

Item	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Total	Mean	STD
Demand-side factors							3.778	1.173
cdsfi1	35	47	49	141	278	550	4.055	1.228
cdsfi2	28	59	67	250	146	550	3.776	1.108
cdsfi3	45	25	66	172	242	550	3.984	1.217
cdsfi4	30	78	100	199	143	550	3.631	1.169
cdsfi5	40	63	95	183	169	550	3.687	1.224
cdsfi6	37	49	83	216	165	550	3.769	1.167
cdsfi7	36	39	105	196	174	550	3.787	1.156
cdsfi8	28	57	96	216	153	550	3.744	1.123
cdsfi9	45	55	134	162	154	550	3.591	1.223
cdsfi10	34	63	91	177	185	550	3.756	1.208
cdsfi11	21	59	117	240	113	550	3.664	1.039
cdsfi12	21	61	95	223	150	550	3.764	1.086
cdsfi13	27	35	93	207	188	550	3.898	1.095
cdsfi14	46	39	110	173	182	550	3.738	1.225
cdsfi15	41	41	86	179	203	550	3.840	1.213
cdsfi16	44	38	86	217	165	550	3.765	1.183

Source: Field Survey, 2023

Note: LR-Local Rank; GR-Global Rank; CT-Construct Total; CWT-Construct Weighted Total; CRII-Construct Relative Importance Index; ^{1,2,3}the position or rank of the constructs.

Mean: 1.00-1.80 = Strongly Disagree; 1.81-2.60 = Disagree; 2.61- 3.40 = Neutral = 3.41-4.20 = Agree; 4.21-5.00 = Strongly Agree.

Table 2: Ranking of Demand-Side Factor Items

Code	Description	Local Rank
cdsfi1	Our enterprise is aware of the various financial products available at our bank(s) (financial literacy).	1
cdsfi3	We believe it is important to open a bank account.	2
cdsfi13	Distance to nearest bank branch facilitates financial inclusion.	3
cdsfi15	Our access to internet facility has enhanced our ability to use mobile banking services	4
cdsfi7	Internet connectivity facilitates our banking transactions on various platforms.	5

cdfsfi2	Our awareness of financial products enhances financial inclusion.	6
cdfsfi6	Our business frequently uses our bank account for daily transactions.	7
cdfsfi16	Documentation required to open bank account is customer-friendly.	8
cdfsfi12	High frequency of ATM card usage enhances usage of bank's product	9
cdfsfi10	Our savings habit enhances the business access to loans and other financial services.	10
cdfsfi8	Our savings habit influences our access to bank's products	11
cdfsfi14	Distance to nearest alternative banking channel facilitates financial inclusion.	12
cdfsfi5	The quality of financial products from our bank is very high	13
cdfsfi11	High frequency of ATM card usage enhances access to bank's product.	14
cdfsfi4	Awareness of available products offered by banks influences financial inclusion.	15
cdfsfi9	Our savings habit influences our usage of bank's products	16

Source: Field Survey, 2023

Reflective Measurement Model Assessment for Demand-Side Factors and Financial Inclusion of MSMEs

The assessment of the PLS-SEM results begins by evaluating the reflective measurement model. A few criteria are used to validate the hypothetical model. These include internal consistency reliability, convergent validity, and discriminant validity in relation to the validity of the measurement model. Cronbach's alpha, which needs to be greater than 0.5, and Composite dependability (CR), which has a minimum threshold of 0.7, are used to assess internal dependability while factor loadings, which should be greater than 0.5, and Average Variance Explained (AVE), which should be greater than 0.5 are used to test convergent validity. The root square of the AVE is used to measure discriminant validity, and it should be higher than the correlation of the other components in order to generate reliable results (Hair *et al.*, 2017).

Table 3 presents Cronbach's Alpha (CA) values of 0.736 for ATM Card usage (ATM) and 0.933 for other demand-side factors. Rho values of 0.745 and 0.735, as well as composite reliability (CR) values of 0.883 and 0.942 for ATM and other demand-side factors respectively, are also presented in Table 3. All these values surpassed the minimum threshold of 0.70, indicating the achievement of internal consistency reliability. This suggests that the measures of the constructs exhibit sufficient internal consistency.

Considering convergent validity, as displayed in Table 3, the AVE values exceed the threshold of 0.5 (Hair *et al.*, 2020). This implies satisfactory convergent validity. Therefore, the construct measures of independent variables demonstrate sufficient internal consistency. On the other hand, discriminant validity examines whether a construct is empirically distinct from other constructs in the framework (Sarstedt *et al.*, 2019). This assessment employs three criteria: cross loadings, Fornell-Larcker criterion, and heterotrait-monotrait (HTMT) criterion, as recommended by Hair *et al.* (2017). When evaluating cross-loadings, an item's outer loading should be higher on its respective latent variable than its cross-loadings on other latent variables (Hair, Ringle & Sarstedt, 2018). As shown in Table 4, each indicator's outer loadings are higher on its respective latent variable than on any other latent variables.

The Fornell-Larcker criterion, which compares the square root of the AVE of each construct with its highest correlation with any other construct, is another approach to assess discriminant validity. Table 5 illustrates that the square root of the AVE of each construct is greater than its highest correlation with any other construct. Lastly, HTMT values are provided in Table 6, and it is noted that the confidence interval does not include the value of 1. Specifically, Table 6 reveals an HTMT value of 0.708, which is below the conservative HTMT threshold of 0.85. An HTMT value above 0.85 indicates a lack of discriminant validity. Therefore, the values in Table 6 all confirm that the HTMT criterion is met. In summary, the results for HTMT strongly support the discriminant validity of the constructs. With the completion of the quality assessment process for the reflective measurement model, the study proceeded to examine the quality of indicators, constructs, and sub-constructs for the formative measurement model.

Table 3: Construct Reliability and Validity of demand side factors on Financial Inclusion

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
CDSFIa Demand -Side Other Factors	0.933	0.935	0.942	0.536
CDSFIb ATM Demand-Side	0.736	0.745	0.883	0.791

Source: Field Survey, 2023

Table 4: Cross Loadings

	CDSFIa Demand- Side Other Factors	CDSFIb Demand- Side
cdsfi1	0.768	0.458
cdsfi10	0.722	0.412
cdsfi13	0.649	0.393
cdsfi14	0.720	0.468
cdsfi15	0.772	0.450
cdsfi16	0.735	0.451
cdsfi2	0.751	0.385
cdsfi3	0.795	0.456
cdsfi4	0.721	0.427
cdsfi5	0.676	0.450
cdsfi6	0.745	0.371
cdsfi7	0.729	0.461
cdsfi8	0.775	0.385
cdsfi9	0.678	0.442
cdsfi11	0.524	0.874
cdsfi12	0.520	0.904

Source: Field Survey, 2023

Table 5: Discriminant Validity Fornell-Larcker Criterion

	BFSEF Frequency of Usage	BQSER Quality of Service	CDSFIa Demand Side Other Factors	CDSFIb ATM Demand Side	bZACES01 Access to Fin Services
BFSEF Frequency of Usage					
BQSER Quality of Service	0.612				
CDSFIa Demand Side Other Factors	0.483	0.445	0.732		
CDSFIb Demand Side	0.396	0.336	0.587	0.889	
bZACES01 Access to Fin Services	0.090	0.062	0.099	0.139	

Source: Field Survey, 2023

Table 6: Heterotrait-Monotrait Ratio (HTMT)

	CDSFIa Demand Side Other Factors
CDSFIb ATM Demand Side	0.708

Source: Field Survey, 2023

Formative Measurement Model Assessment for Demand Side Factors and Financial Inclusion of MSMEs

The formative measurement model assessment was conducted for the relationship between demand-side factors and financial inclusion. The assessment of the first layer was considered for the financial inclusion indicators with quality of service (QOS), access to financial services (AFS), and frequency of usage (FOU) latent variables as the sub-constructs. This process encompassed two key steps. First, it involved assessing the Variance Inflation Factor (VIF) to identify potential collinearity problems among indicators, with a VIF value of 5 or higher indicating potential collinearity (Hair *et al.*, 2017). Second, it evaluated the significance and relevance of the formative indicators to determine whether they genuinely contribute to forming the construct. Table 7 presents the VIF values for the indicators of financial inclusion. The table reveals that the highest VIF is 2.060, significantly below the threshold value of 5. Consequently, it was concluded that there were no collinearity issues among the indicators.

The study further scrutinized the significance and relevance of the outer weights in Table 8. For formative items, it is crucial to test the relevance of these indicators to decide whether they should be retained or removed. There are three options to retain these indicators. Firstly, we retain if the indicator is relatively important i.e. the weight is significant. Secondly, we retain if the weight is absolutely important i.e. the loadings is above 0.5 or significant when its weight is not. Thirdly, we retain using the rule of thumb (RoT) when the loadings is less than 0.5 but it is significant. Otherwise, we remove or delete indicators if the above are not satisfied or if the loadings is less than 0.1 (though in extreme cases).

The study found issues with ‘MSMEs readily use DMB’s current accounts’ (bZaces6) and ‘MSMEs readily use DMB’s deposit accounts’ (bZaces7). The two items have relevance and significant issues which were related to content overlap; thus, they were deleted from further analysis. All other indicators of the sub-constructs were retained as indicated in Table 8. The study also assessed the quality of formative second order model that involved the financial inclusion and the three sub-constructs. The study assessed the VIF, and significance and relevance of the sub-constructs (QOS, AFS, and FOU). The results of these processes are depicted in Tables 7 and 8. The results show that there is no issue of collinearity and all the sub-constructs are relatively important. These procedures conclude the quality assessments for both the reflective and formative measurement models. The study thereafter assessed the structural model, which tests the hypothesis and provides the information required for this objective.

Table 7: VIF for Demand-Side Factors and Financial Inclusion

S/N	Indicators	VIF
1	bZaces1	1.395
2	bZaces10r	1.311
3	bZaces11r	1.328
4	bZaces2	1.547
5	bZaces3r	1.315
6	bZaces4	1.346
7	bZaces5	1.276
8	bZaces8	1.360
9	bZaces9	1.418
10	bfser1	1.490
11	bfser2	1.978
12	bfser3	2.060
13	bfser4	1.450
14	bfser5	1.645
15	bqser1	1.884
16	bqser2	1.450
17	bqser3	1.545

Source: Field Survey, 2023

Table 8: Significance and Relevance of Indicators for Demand-Side Factors and Financial Inclusion

Financial Inclusion	Loadings	Weights	Standard Deviation (STDEV)	T Stat	P Values	Decision
bZaces1 -> bZACES01 Access to Fin Services	0.206	0.105	0.307	0.344	0.731	Retained
bZaces10r -> bZACES01 Access to Fin Services	0.217	0.152	0.281	0.540	0.589	Retained
bZaces11r -> bZACES01 Access to Fin Services	0.512	0.700	0.256	2.730	0.006	Relatively Important
bZaces2 -> bZACES01 Access to Fin Services	0.186	0.058	0.300	0.194	0.846	Retained
bZaces3r -> bZACES01 Access to Fin Services	-0.287	0.011	0.287	0.038	0.969	Retained
bZaces4 -> bZACES01 Access to Fin Services	0.512	0.571	0.293	1.945	0.052	Absolutely Important
bZaces5 -> bZACES01 Access to Fin Services	0.311	0.196	0.290	0.676	0.499	Retained
bZaces8 -> bZACES01 Access to Fin Services	0.441	0.352	0.284	1.241	0.215	Retained
bZaces9 -> bZACES01 Access to Fin Services	0.305	0.232	0.309	0.751	0.453	Retained
bfser1 -> BFSEF Frequency of Usage	0.689	0.369	0.068	5.383	0.000	Relatively Important
bfser2 -> BFSEF Frequency of Usage	0.563	0.018	0.094	0.192	0.848	Absolutely Important
bfser3 -> BFSEF Frequency of Usage	0.646	0.252	0.088	2.869	0.004	Relatively Important

bfser4 -> BFSE Frequency of Usage	0.675	0.290	0.082	3.522	0.000	Relatively Important
bfser5 -> BFSE Frequency of Usage	0.797	0.474	0.085	5.573	0.000	Relatively Important
bqser1 -> BQSE Quality of Service	0.895	0.658	0.084	7.881	0.000	Relatively Important
bqser2 -> BQSE Quality of Service	0.633	0.114	0.081	1.401	0.161	Absolutely Important
bqser3 -> BQSE Quality of Service	0.760	0.446	0.082	5.441	0.000	Relatively Important

Source: Field Survey, 2023

Structural Model for Demand-Side Factors and Financial Inclusion

After confirming the satisfactory measurement model assessment for all the indicators of each latent variable (validity and reliability), the outcomes of the Inner Structural Model was evaluated. This evaluation involved assessing for collinearity issues, determining the R^2 (coefficient of determination) value of the endogenous constructs, path coefficients, and f^2 (effect size) value (Sarstedt *et al.*, 2017). The study utilised a combination of the repeated indicators approach and latent variable scores within a two-stage hierarchical component model (HCMs), following the approach outlined in Sarstedt *et al.* (2019). Figure 1 and Figure 2 illustrate the algorithm and bootstrapping procedure, respectively. The structural model assessment includes examining the VIF, statistical significance and relevance of path coefficients, R^2 (coefficient of determination), and f^2 (effect size), which represents the order of relevance of predictor constructs in explaining a dependent construct in the structural model (Hair *et al.*, 2018).

In the first instance, the structural model was scrutinized for collinearity issues using the variance inflation factor (VIF) for the exogenous (predictor) constructs. Table 9 displays the VIF values for these predictor constructs, ranging from 1.013 to 1.557. These values are significantly below the conservative threshold of 5 (Hair *et al.*, 2018), indicating that collinearity is not a concern, and these constructs were appropriately constructed. Figure 2 illustrates the variables considered in the model, with controls for the respondents' age, educational status, and gender. Furthermore, the results include the coefficient of determination (R^2), which measures the overall effect size and variance explained in the endogenous construct (dependent variable) by the exogenous constructs (independent variables) for the structural model (Hussain *et al.*, 2018). Table 11 indicates that the adjusted R^2 value is 0.319. This suggests that the independent variables account for about 32 percent of the variation in the dependent variable, which can be considered substantial according to Cohen (1992) as cited in Tehseen *et al.* (2019). Cohen's thresholds define R^2 values of 0.26, 0.13, and 0.02 as substantial, moderate, and weak, respectively. Similarly, effect sizes of 0.02, 0.15, and 0.35 are classified as weak, moderate, and strong based on Cohen's (1992) criteria.

Effect size (f^2) is defined by Hussain *et al.* (2018) as the extent of the impact of each exogenous latent construct on the endogenous latent construct. When an independent construct is removed from the path model, it influences the coefficient of determination (R^2). According to Cohen (1988), f^2 values of 0.02, 0.15, and 0.35 are categorized as weak, moderate, and strong effects, respectively. This study reports a small and medium effect sizes for ATM demand side factor [ATM card usage] ($f^2 = 0.028$) and demand side [other factors] ($f^2 = 0.164$) respectively, whereas, all other independent variables have no effect. This implies that only demand-side (other factors) and ATM demand-side factor of the internal factors influenced to a varying degree the adjusted R^2 of 0.32 approximately, meaning that the demand-side [other factors] (i.e financial literacy, internet connectivity, savings culture, distance to nearness, e.t.c), as well as ATM card usage and other control variables explain about 32% variation in financial inclusion. Whereas, the values of f^2 for age, education and gender (sex) on financial inclusion are 0.014, 0.003 and 0.013 respectively, hence considered to be of no effect.

The standardized coefficients (Beta) representing the paths between the latent variables in the structural model are displayed in Figure 1. These path coefficients indicate the expected change in the dependent construct for a one-unit change in the independent construct(s) (Hussain *et al.*, 2018). Additionally, a bootstrapping procedure was conducted to assess the significance level of the path coefficients, as illustrated in Figure 2. Therefore, Table 11, Figures 1, and 2 present the outcomes of the hypothesized model. Table 11 provides insights into the significance and relevance of the independent variables on the dependent variable. The results demonstrate that all the independent variables are significant at a 95 percent confidence level, except for the educational variable ($\beta = -0.046$, $p = 0.176$, $t = 1.352$), where its confidence interval includes zero ($-0.113 \leq CI \leq 0.021$). This suggests that educational level does not significantly impact financial inclusion among MSMEs in Southwest, Nigeria.

Furthermore, Table 11 reveals that demand-side other factors (CDSFIa), such as financial literacy/awareness (awareness of various financial products and services), proximity to bank branches (bank proxy), quality of financial products and services provided by banks, saving habits, and usage of bank accounts, among others, have a positive and significant influence on the financial inclusion of MSMEs ($\beta = 0.415$, $t = 8.821$,

and $p < 0.05$). This implies that a one-unit improvement in demand-side other factors results in a 0.415 unit increase in the financial inclusion of MSMEs in Southwest, Nigeria. Therefore, facilitating factors that influence demand for the services of formal financial institutions by MSMEs can enhance their inclusion in mainstream financial system, all things being equal. This finding aligns with the results of Ramakrishna and Trivedi (2018), who empirically demonstrated the significant contribution of demand-side factors to financial inclusion. The results indicate that having a bank account, the usage of bank accounts, and access to banking branches, among other factors, all have significant effect on financial inclusion. Similarly, Betgilu *et al.* (2021) support the positive impact of demand-side factors on MSMEs' financial inclusion, while Chattopadhyay (2011) also found that the absence of demand-side factors leads to financial exclusion. Furthermore, the results in Table 11 show that ATM card usage (CDSFib) has a positive and significant influence on the financial inclusion of MSMEs ($\beta = 0.172$, $t = 3.838$, and $p < 0.05$). Consequently, a one-unit increase in ATM card usage by an MSME enhances their financial inclusiveness by 17.2 percent, holding all other factors constant. In summary, the findings suggest that demand-side factors have a positive and significant influence on MSMEs' financial inclusion in the study area ($p = 0.006$).

Table 9: Inner VIF Values for Financial Inclusion Second Order Measurement Model

Construct	VIF
BFSEF Frequency of Usage	1.782
BQSER Quality of Service	1.677
CDSFia Demand Side Other Factors	1.775
CDSFib ATM Demand Side	1.580
bZACES01 Access to Fin Services	1.021

Source: Field Survey, 2023

Table 10: Significance of Weight for Financial Inclusion Second Order Measurement Model

Item	Weight	T-Stat	Decision
BFSEF Frequency of Usage -> BFI Financial Inclusion	0.570	21.63	Relatively Important
BQSER Quality of Service -> BFI Financial Inclusion	0.504	16.613	Relatively Important
bZACES01 Access to Fin Services -> BFI Financial Inclusion	0.142	3.853	Relatively Important

Source: Field Survey, 2023

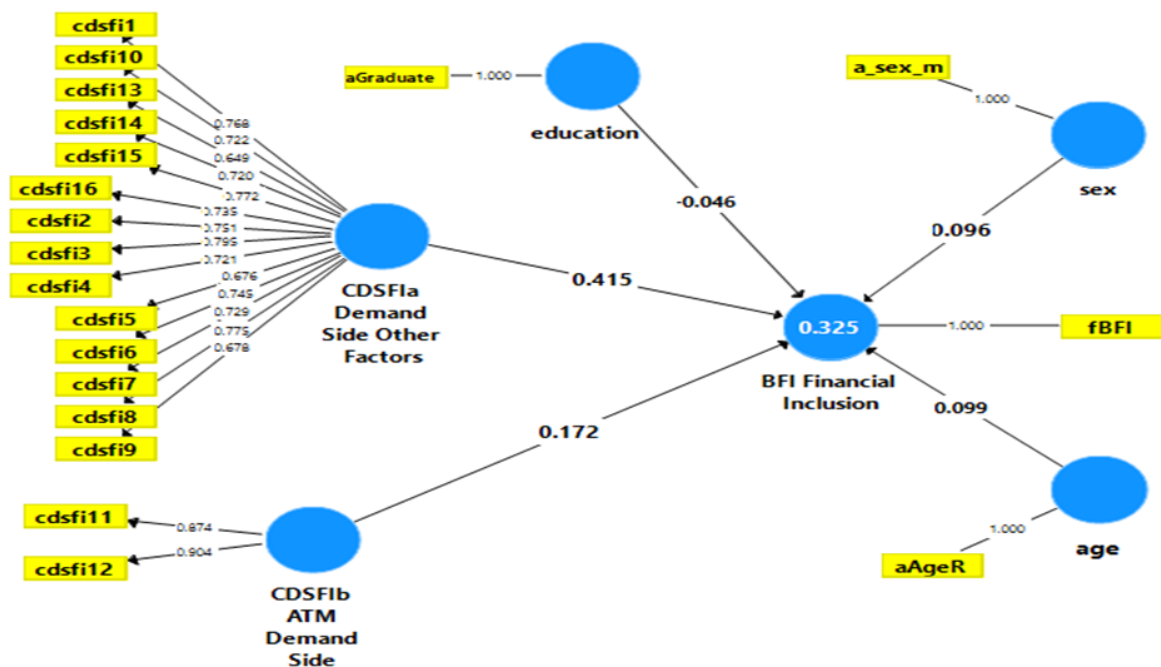


Figure 1: Algorithm of Structural Model for Demand-Side Factors and Financial Inclusion Source: Field Survey, 2023

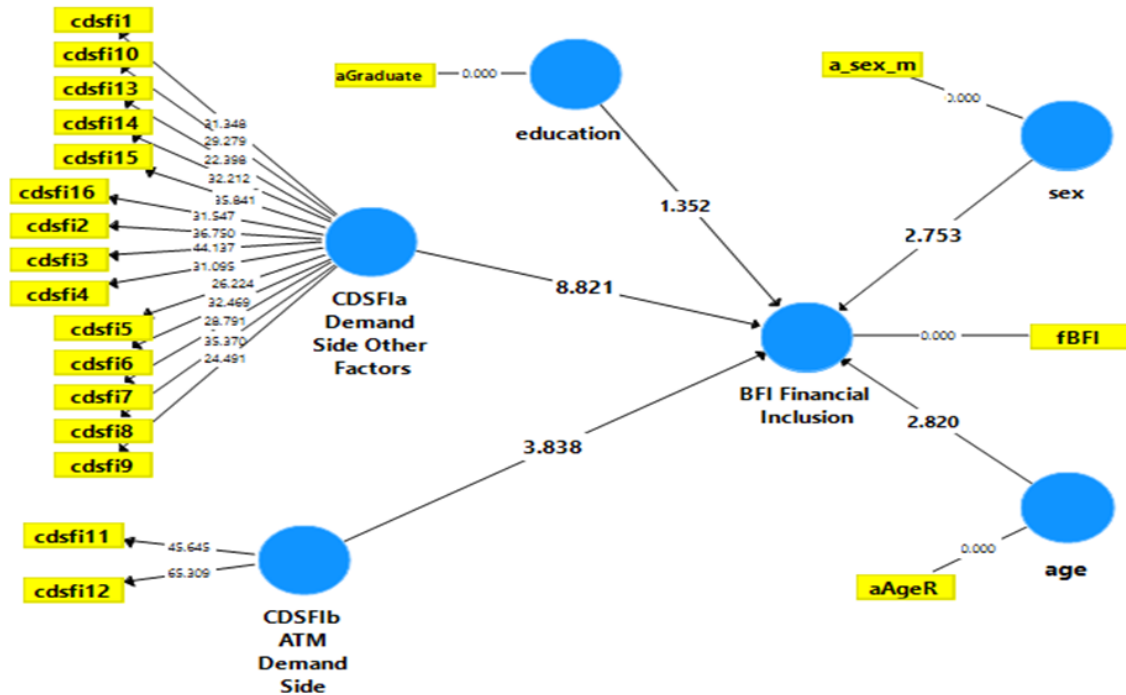


Figure 2: Bootstrapping of Structural Model for Demand-Side Factors and Financial Inclusion
Source: Field Survey, 2023

Table 11: The Significance and Relevance of Demand Side Factors and Financial Inclusion

Path Coefficients	Beta	STDEV	T Stat	P Values	Bias	2.5%	97.5%	VIF	f square
CDSFIa Demand Side Other Factors -> BFI Financial Inclusion	0.415	0.047	8.821	0.000	0.001	0.320	0.504	1.557	0.164
CDSFib ATM Demand Side -> BFI Financial Inclusion	0.172	0.045	3.838	0.000	0.000	0.082	0.257	1.553	0.028
age -> BFI Financial Inclusion	0.099	0.035	2.820	0.005	-0.001	0.029	0.170	1.014	0.014
education -> BFI Financial Inclusion	-0.046	0.034	1.352	0.176	0.000	-0.113	0.021	1.013	0.003
sex -> BFI Financial Inclusion	0.096	0.035	2.753	0.006	0.000	0.027	0.162	1.026	0.013
R Square	0.325			0.006					
R Square Adjusted	0.319			0.006					

Source: Field Survey, 2023

V. Implication To Research And Practice

As a valuable addition to existing knowledge, this study provides empirical insights into the underlying factors on the demand-side that impact financial inclusion among MSMEs in Southwest, Nigeria. The findings distinctly demonstrate that financial inclusion of MSMEs is positively shaped by demand-side factors. This implies that an improvement in any of these factors will further boost financial inclusion of MSMEs. For further research, this understanding has the implications of expanding the scope of demand-side factors beyond this study with a view to comparing result. The study further assists in identifying strong and important variables (such having a bank account and ATM card usage) capable of influencing financial inclusion of MSMEs. In practice, the study holds significant implications for MSMEs as it will assist enterprises in recognising the demand-side factors capable of influencing their financial inclusion and, consequently, foster the growth of the sector.

Moreover, the implications of the study for financial institutions in Nigeria cannot be overemphasised as it is expected to aid banks in evaluating the effectiveness of demand-side factors in their strategies for including MSMEs financially. In practice, the study facilitates the straightforward identification of crucial areas that require attention and action; take for instance, the need to sensitize MSMEs on the importance of having bank account and make account opening procedures less cumbersome to enterprises. This becomes crucial since the study

implies that opening of bank accounts is contingent on having access to ATM card and consequently, this has implications for fostering financial inclusion of MSMEs. This further implies that the ever-ready posture of DMBs to provide relevant assistance to MSMEs is crucial to financial inclusion of enterprises.

VI. Conclusion

The study empirically investigated the relationship between demand-side factors and financial inclusion of MSMEs in Southwest, Nigeria. The results of the descriptive analysis showed that financial literacy (knowledge about bank products and services), having a bank account and bank proximity were the leading demand-side factors enhancing the financial inclusion of MSMEs. Empirically, the findings distinctly demonstrated that financial inclusion of MSMEs was positively and significantly driven by demand-side factors, which included awareness of diverse financial products (financial knowledge/literacy), savings behaviour, and utilization of bank accounts, among others. Furthermore, the results showed that ATM card usage had a positive and significant influence on the financial inclusion of MSMEs in the study area, while a "high frequency of debit card usage" (ATM card) was a robust indicator of financial inclusion that enhanced both access to and utilization of bank products. The study, however, established that opening of bank accounts was *sine qua non* to having access to ATM card, which ultimately promotes financial inclusion. The study, therefore, concluded that demand-side factors had a significant positive impact on financial inclusion of MSMEs in Southwest Nigeria.

VII. Recommendations

Based on the findings, the study recommended as follows:

- i. Since opening of bank accounts by MSMEs promotes access and frequency of usage of ATM cards which in turn facilitates financial inclusion, DMBs should make account opening procedures by MSMEs less cumbersome and customer-friendly.
- ii. Stakeholders should ensure the improvement of the demand-side factors with a view to enhancing the financial inclusion of MSMEs
- iii. The availability of ATMs and the proximity of point-of-sale (POS) terminals to users should be employed as strategic tools to promote financial inclusion in the study area.

VIII. Further Research

The study empirically investigated the relationship between demand-side factors and financial inclusion of MSMEs in Southwest, Nigeria. However, further studies may consider supply-side factors or broaden the scope to include the combination of both.

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