Journal of Science, Management and Technology
ISSN (Print): 1597-7463; eISSN (Online): 2811-2598, Volume 6, Issue 1
https://dx.doi.org/10.4314/hpjsmt.v6i1.8

Effects of Point of Sale (POS)Terminal Utilization on Micro Enterprises in Dambatta Local Government Area of Kano State, Nigeria.

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Abstract

The study looked at the effects of POS utilization by micro businesses on their sales and access to some basic financial services especially micro credit which is often considered as necessary for business expansion and development. The chosen area of study is one of the rural local government areas in kano state and hence there is need to find out whether the use of POS in such a location is actually promoting the development of micro enterprises. A sample of 111 micro enterprises who utilize point of sale terminal for their transactions was used for the study. The data gathered were analyzed using multiple linear regression, logistic regression and a Tobit regression. The result indicated that POS utilization adds more to daily sales than cash sales and that the likelihood of making more sales with POS by micro entrepreneurs in the study area is largely determined by business location, type of business, volume of sales and the years of bank account holding. While the likelihood of obtaining formal credit is majorly determined by location of business. The study therefore recommends that the financial inclusion drive of the CBN should be made more intense and the internet service should be improved in the rural areas to facilitate ease of transactions by POS terminal users.

Keywords: Point of Sale Terminal and Micro Enterprises

Introduction

Technological innovations have profoundly impacted the business landscape thus providing a secure, safe, accurate, efficient and convenient business environment. Majority of businesses now conduct transactions via electronic channels owing to the medium's continuous enhancement overtime. (Bayo et al; 2023). The imperative for sustainability, relevance and market stability has the led to the adoption of Information and Communication Technology solutions particularly Point of Sale terminals in order to capitalize on their numerous advantages. Innovative solutions and protocols are being designed to be able to create and support a smooth and reliable global service platform (Onyebuchi et al; 2015). Among the major ways of carrying out business transactions

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cashlessly is the use of Point of Sales (POS) terminus. The use of POS terminals to make financial payments in Nigeria was introduced by the Central Bank of Nigeria (CBN) in 2012 to promote its cashless policy with the aim of improving the payment system. According to Herman (2017) in Handoka and Mauritsiusb (2021), POS is a comprehensive transaction system which integrates cash register functionality with supporting software and peripheral devices. It goes beyond just buying and selling transactions but can also integrate accounting calculations, goods and stock management, employee payroll modules, accounts payable accounts, and various other functions. Okoye et al (2022) asserts that there has been progressive development in the number of active POS terminals provided by banks to mobile money agents since the introduction of POS. This was attributed to the wide acceptance of POS transactions in the Nigerian society (Bayo et al; 2023).

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role which drives economic transformation and industrialization thereby contributing significantly to the growth and development of both developed and developing countries (Kale; 2019). According to World Bank Reports (2020), MSMEs account for about 90% of enterprises, over 50% of GDP and 75% of new jobs created globally. Likewise, their role in the sustainability of the Nigerian economy cannot be overemphasized. They contribute about 46.31% to the GDP with over 96.7% of Nigerian business outfits, providing 84.02% of jobs thus increasing growth, reducing unemployment and boosting economic capacity (NBS; 2021 in Ikpe & Elumalue; 2024). Looking at the role played by micro small and medium enterprises in the development of every nation and the fact that the global economy is now transitioning towards a cashless and electronic based economic transaction, one needs to ask how well has the use of POS affected the sales and credit accessibility of micro entrepreneurs in rural areas like Dambatta?

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Statement of the Research Problem

Many countries of the world have developed a robust and reliable payments system which is considered to be necessary and essential for facilitating and fostering their economic development. Point of Sale (POS) started in Nigeria following the introduction of cashless policy in the country. POS is where a (purchase) transaction is completed, usually coinciding with the time a customer makes a payment in exchange for goods and services using his or her debit/credit card instead of cash. It is an electronic device allowing the use of payment cards such as debit cards at a physical point of sale in making payments for transactions or demands made. This therefore made it advantageous following its efficiency and convenience (Okoye et al; 2022).

Yaqub et al (2013) asserts that the use of POS terminals to make financial payment in Nigeria was introduced by the Central Bank of Nigeria to enhance its cashless policy with the aim of improving the country's payment system. Ever since the introduction, there has been significant expansion in the number of active POS terminals provided by banks to mobile money merchants. Studies have revealed that operation of POS in most rural communities of the country were drastically affected by limited number of banks and lack of functional internet service (Bayo et al; 2023). Is the situation any different from this research's area of study? In addition, the CBN introduced POS in its quest to promote cashless means of transactions and enhance financial inclusion. The question at this juncture is that: has more use of electronic means of transactions significantly increased daily sales by micro businesses in the study area? Considering the fact that the study area is one of the rural local government areas of Kano state, did the use of POS enhanced access to basic financial services by micro entrepreneurs in the area?

Objectives of the Research

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The main objective of the research is to determine the effects of using P.O.S by micro business owners on their businesses while the specific objectives are:

i. To examine the effect of P.O.S utilization on sales/turnover of micro enterprises in the study area
ii. To determine the extent to which use of P.O.S by micro entrepreneurs affects their access to credit in the study area.

Research Questions

i. What is the effect of P.O.S utilization on the sales/turnover of micro enterprises in the study area?
ii. To what extent does the use of P.O.S determine the access of micro entrepreneurs to credit in the study area?

Conceptual Review

Point of Sale (P. O. S) Terminal

Point of Sale Terminal is a hard ware device that allows local debit cardholders to make withdrawals or make payment for product and services. The device is mostly used by retail shop owners where payment is being made with the use of an automated teller machine cards or via electronic bank transfers. Other payment and transactions carried out with the device include electricity bills settlement, payment for airtime, TV or cable subscription and so on. However, because the services of the banks do not serve everybody in Nigeria especially those in remote areas, banks created POS business as terminals to bring financial services closer to the unbanked and under banked segment of the society. The introduction of POS terminals according to NFIU; 2022 in Obi; 2023 had led to relieving the already crowded banks and the crowd often witnessed

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at ATM spots and also encourage entrepreneurs who might have interest as bank agents while earning their own commission. POS is the particular place where a transaction occurs. A terminal POS is generally referred to the hardware and software used for check out of the equivalent of an electronic cash register. It manages the selling process by a salesperson accessible interface. The system allows checking of customers' balances, creating, deducting money from customers' accounts and printing of receipts (Jimoh etal; 2023). According to Umar et al (2021), POS is one of the e-payment systems launched in Nigeria to further the course of cashless policy. It is an electronic payment tool which enables individuals to make purchases with electronic cards. It also accepts ATM cards for payment of goods and services. This card stores account information on microchips. The microchip contains a purse in which monetary value is held electronically. The card can be used to make purchase of goods and services online, in supermarkets, shopping malls, and other market places. POS allows cardholders to have a real-time online access to funds and information in their bank account through debit or cash card.

The number of POS terminals in Nigeria is 2.68million as at March 2024 according to NIBSS. Naira scarcity as a result of the CBN's redesign and cash withdrawal policy has pushed POS transactions to 807.1bn Naira in January 2023. POS users include provision store owners, filling stations, food vendors, café and business centers, pharmaceuticals and supermarkets.

Micro Enterprises

The concept of micro enterprises is one that has no universal definition. This is because, categorizing an enterprise depends on a number of factors including the country or region involved, the type of activities as well as the period during which the definition is made. According to the OECD (2017), there is no universally accepted definition of Micro enterprise as they are defined differently in accordance with the legislation of different countries with "Micro" dimension of a

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firm being relative to the size of the economy However, employees, assets, sales and loan size within which the enterprise falls are commonly used in defining a firm as Micro, Small or Medium (World Bank, 2019). Micro enterprises within the context of Nigeria are those enterprises with employment size of 3 to 9 persons and a turnover of N3million but less than N25million. These forms of enterprises are the dominant in Nigeria numbering 38, 413,420 or 96.90% of the total 39,654,385 MSMEs existing in Nigeria as at 2020 (Mohammed et al;2022). According to the IFC (2022), a micro enterprise is one whose asset value is less than 5m or whose annual turnover is less than 20m or employs less than ten people. While according to Omonona et al (2023), Micro enterprises are those business entities that employ 3-9 persons or have annual turnover of 3-5million Naira.

Empirical Studies

The study of Onyebuchi et al (2015) on the adoption and challenges of POS in Nigeria showed that in spite of having POS terminals, most merchants still accept cash above POS. This is because according to the finding, POS deployment was involuntary as they were deployed by banks unsolicited. The study proposed creating increased awareness of consumers which will accelerate adoption of the POS terminals and card payment system. Mafimisebi et al (2019) sought to determine the effects of POS utilization on effective demand for agricultural commodities in stores and supermarkets and used multi stage sampling. Their study identified that convenience is the main reason for utilizing POS and concluded that the use of POS increased the demand for agricultural commodities.

Olasukanmi and Tejumade (2021) investigated the effect of POS on the performance of small and medium enterprises in Lagos state and their outcome indicated that POS services have helped increase their sales volume, reduced queues and increased their income. While in Umar et al

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(2021), customers prefer to make payment with cash over the counter rather than with POS and therefore recommends that policies be formulated to encourage supermarket customers to adopt POS for payment. Okoye et al (2022) examined the impact of POS business in reducing unemployment rate in Anambra state. Their study found out that POS has significant impact in reducing unemployment in Nigeria. Availability and use of POS has served as a source of income for the owners of POS business centers in the state. In their own study, Jimoh et al (2023) stated that cashless and e -payment policies need a total transformation for a sustainable improvement in Nigeria and there is need to win the hearts of the customers perception towards POS machines. From the foregoing, it is evident that none of the studies reviewed covered the geographical area of this study. Some of the reasons for introducing POS in Nigeria is in order to enhance access to financial services by those that are financially excluded, bulk of which are situated in rural areas like Dambatta. As such, while other studies concentrated on the use of POS in urban centers, this study chose to focus on a rural area. Likewise, previous researches did not consider the effect of POS use on the sales and credit access of micro entrepreneurs in their respective areas of study. In other words, the variables of interest were not covered by previous researches.

Methodology

The research employed a survey design where a cross section of micro entrepreneurs who make use of P.O.S in their businesses and operate in Dambatta local government area were used as target population for the study. Since the exact population is not known, it would be difficult to determine the appropriate sample size. As such, the study adopted Green's (1991) recommendation for sample size determination where $n \geq 50+m$ for coefficient of determination (R^2) and $n \geq 104+m$ for independent predictors (βs). However, "for those interested in both R^2 and βs should calculate n both ways and choose the larger sample size" (Memon; 2020). This study therefore used the

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104+m being the one with the larger sample size and with seven (7) explanatory variables arrived at a sample size of one hundred and eleven (111). Stratified sampling technique was used to select micro business operators from different districts/wards in the local government area including: Ajumawa, Dambatta East, Dambatta West, Fagwalawa, Gwanda, Gwarabjawa, Goron maje, Kore, Saidawa and Sansan.

A structured questionnaire was used to collect data from the respondents. Three (3) separate regressions were used to achieve the set objectives. For the first objective, a multiple regression was used to determine the effect of the use of POS on the sales of micro entrepreneurs in the study area. The model is stated as:

$$Sales = \alpha + \beta_{1A}age + \beta_2Gen + \beta_3Loc + \beta_4Occ + \beta_5Typ + \beta_6POS + e_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

While in order to know the likelihood of making more sales with POS by the entrepreneurs, a logistic regression was used as follows:

$$POS = \alpha + \beta_{1A}age + \beta_2Gen + \beta_3Loc + \beta_4Typ + \beta_5Sales + \beta_6Bankacc + \beta_7YrsPOS + e_i \ldots\ldots\ldots\ldots (2)$$

Where the dependent variable is POS and is considered to be a binary variable taking the values of 1 or 0.

As for the second objective, a Tobit regression was used to examine the effect of POS utilization on credit access by the local micro entrepreneurs.

$$Cr = \alpha + \beta_{1A}age + \beta_2Gen + \beta_3Loc + \beta_4Typ + \beta_5Sales + \beta_6Bankacc + \beta_7YrsPOS + \beta_8POS + e_i \ldots\ldots\ldots\ldots (3)$$

Result and Discussion

The summary statistics in table I shows that the mean age of the respondents is 33years while their daily sales on average is ₦37,000. Micro entrepreneurs in the study area have been operating bank

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accounts for an average of 8years. However, the use of POS for business transaction in the study area started about 7years ago. While in table II, the geographical location of their business indicates that, 32% of them operate in the commercial centers of Dambatta LGA which of course comprise of Dambatta east and west while 68% of them run their businesses in the core rural areas covering the remaining 8 wards of the LGA. Only 9% of the total respondents are women and 70% of the respondents sell more with cash rather than with POS. Lastly, the data shockingly reveals that only 0.9% of the respondents ever gained access to formal credit for business development since the commencement of the use of POS in his business.

Coefficients of the ordinary least squares' regression in table III indicate that the variable of interest which is the use of POS over cash is significant at 95% and is positively related to the daily sales recorded by micro business owners in the study area. This conforms to Mafimisebi et al (2019) whose findings showed that using POS by agricultural commodity merchants increased the demand for their products. It also tallies with the results of Olasukanmi and Tejumade (2021) which indicated that POS use has assisted in increasing the sales volume of their users among others things. Other variables like age, place or location of business and gender are also found to be significant and positively related with daily sales. As for the second regression which is the logistic regression, the dependent variable (the likelihood of using POS) is also positively related to business location, type of business, volume of sales and the years of account holding. Coefficient of all these variables were also found to be significant in determining the likelihood of making more sales with POS than with cash. In other words, the tendency that micro entrepreneurs will make more sales with POS is largely explained by their place of operation (whether in the core rural area or in the commercial hub of the local government area), the type of business -which is

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mostly provision and foodstuff sales, volume of sales and the number of years they have been operating an account with any bank.

The extremely low number of micro business owners who have actually gained access to credit from the time they started using POS necessitated the use of a Tobit regression and the result indicated that only location of the business owners is significant at 95% and is negatively related to the dependent variable even though it is significant in explaining their likelihood of accessing credit for business expansion. Coefficients of all other variables turned out to be insignificant.

Table I: Description of Data (Continuous variables)

S/N	VARIABLES	MEAN	MINIMUM VALUE	MAXIMUM VALUE
1	Age (years)	32.5045	23	50
2	Daily sales (₦)	36,693.69	30,000	100,000
3	Years of account holding	7.891892	2	19
4	Years of POS use	3	1	7

Source: Field survey (2024)

Table II: Description of Data (Categorical variables)

S/N	VARIABLES	FREQUENCY	PERCENTAGE
1	Gender (=1 if female)	10	9.01
2	Geographical location (=1 if rural area)	75	67.57
3	Type of business (=1 if provision)	99	89.19
4	Other occupation (=1 if yes)	20	18.02
5	Use of POS (=1 if more sales with POS)	33	29.73
6	Access to credit (=1 if had access to credit)	1	0.90

Source: Field survey (2024)

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Table III: Estimation Results

S/N	VARIABLES	LEAST SQUARES REGRESSION	LOGISTIC REGRESSION	TOBIT REGRESSION
1	Age	-4508.449 * (1721.691)	.4806492 (.3238458)	.0014963 (.0126144)
2	Daily sales	-	.0000609* (.0000226)	-4.35e-07 (6.26e-07)
3	Years of account holding	-	-.1542359*** (.0847787)	.000372 (.0027542)
4	Years of POS use	-	.1612497 (.2040078)	.0091513 (.0063087)
5	Gender	-10215.51* (4258.191)	.9521357 (.927687)	-.0140337 (.035216)
6	Geographical location	-9601.419* (4290.822)	1.472453* (.5312182)	-.0384395*** (.0213546)
7	Type of business	-9143.058 (9217.086)	-2.349438* (.9772146)	.0331085 (.0312457)
8	Other occupation	2729.373 (4610.158)	-	-
9	Use of POS	9100.826 ** (4734.15)	-	-.0024206 (.0216803)

Source: Field survey (2024)

Standard errors in parentheses

**significant @ 99%, **significant @95%, ***significant @90% confidence level*

Conclusion

The use of POS has the potential of developing micro businesses via increasing sales and giving more access to formal credit but it has contributed very little in the study area due to the fact that people in the study area prefer to make payment with cash due to lack of bank accounts, poor network/connectivity and loss of confidence in the system. The CBN and other stakeholders in the financial sector therefore still have a long way to go in the attempt at promoting a cashless

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economy and of course enhancing financial inclusion. The use of electronic payment system is still viewed as generally meant for giant or sophisticated enterprises. Most women and rural dwellers are still financially excluded and hence could not transact using POS terminals. So, in order to achieve the objectives of financial inclusion the women folks and rural economy needs to be properly integrated into the financial system. The problem of poor network and connectivity in the rural areas also needs to be addressed being one of the major reasons why business owners and their customers prefer to transact with cash. Lastly, the extremely low proportion of the respondents who have actually gained access to credit for business expansion calls for concern looking at the fact that micro businesses require credit facility to sustain and grow their businesses.

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https://dx.doi.org/10.4314/hpjsmt.v6i1.8

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Appendix I

```
Linear regression                               Number of obs     =        111
                                                F(7, 103)         =       2.34
                                                Prob > F          =     0.0292
                                                R-squared         =     0.2610
                                                Root MSE          =      14303
```

dysalesy1	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
age	-4508.449	1721.691	-2.62	0.010	-7923.017	-1093.882
age2	64.36674	24.41159	2.64	0.010	15.9521	112.7814
1.loc	-9601.419	4290.822	-2.24	0.027	-18111.25	-1091.585
1.gender	-10215.51	4258.191	-2.40	0.018	-18660.63	-1770.393
1.typ	-9143.058	9217.086	-0.99	0.324	-27422.97	9136.858
1.otheroccupation	2729.373	4610.158	0.59	0.555	-6413.788	11872.53
1.pos	9100.826	4734.15	1.92	0.057	-288.244	18489.9
_cons	124904.5	32412.92	3.85	0.000	60621.14	189187.9

Journal of Science, Management and Technology
OPEN ACCESS
ISSN (Print): 1597-7463; eISSN (Online): 2811-2598, Volume 6, Issue 1
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Iteration 0:   log pseudolikelihood = -67.549814
Iteration 1:   log pseudolikelihood = -54.041609
Iteration 2:   log pseudolikelihood = -53.602295
Iteration 3:   log pseudolikelihood = -53.598112
Iteration 4:   log pseudolikelihood = -53.598111

Logistic regression                                     Number of obs =    111
                                                        Wald chi2(8)  =  19.27
                                                        Prob > chi2   = 0.0135
Log pseudolikelihood = -53.598111                       Pseudo R2     = 0.2065
```

pos	Coefficient	Robust std. err.	z	P>|z|	[95% conf.	interval]
age	.4806492	.3238458	1.48	0.138	-.1540769	1.115375
age2	-.0067116	.0045331	-1.48	0.139	-.0155962	.002173
1.loc	1.472453	.5312182	2.77	0.006	.4312847	2.513622
1.gender	.9521357	.927687	1.03	0.305	-.8660975	2.770369
1.typ	-2.349438	.9772146	-2.40	0.016	-4.264744	-.434133
dysalesy1	.0000609	.0000226	2.70	0.007	.0000167	.0001051
bankaccyrs	-.1542359	.0847787	-1.82	0.069	-.320399	.0119272
posyrs	.1612497	.2040078	0.79	0.429	-.2385982	.5610976
_cons	-9.782034	5.917374	-1.65	0.098	-21.37987	1.815806

```
.

Tobit regression                                        Number of obs     =      111
                                                                Uncensored =      111
Limits: Lower = -inf                                    Left-censored =        0
        Upper = +inf                                    Right-censored =        0

                                                        LR chi2(9)        =     8.56
                                                        Prob > chi2       =   0.4792
Log likelihood = 108.65691                              Pseudo R2         = -0.0410
```

credity2	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
age	.0016498	.0126885	0.13	0.897	-.0235177	.0268173
1.loc	-.0379569	.0217864	-1.74	0.084	-.0811702	.0052564
1.gender	-.0137402	.035312	-0.39	0.698	-.0837813	.056301
age2	-3.85e-06	.0001751	-0.02	0.983	-.0003512	.0003435
1.typ	.0320763	.0325831	0.98	0.327	-.0325521	.0967047
dysalesy1	-4.10e-07	6.65e-07	-0.62	0.539	-1.73e-06	9.09e-07
bankaccyrs	.0003098	.0028098	0.11	0.912	-.0052633	.005883
posyrs	.0092272	.0063448	1.45	0.149	-.0033577	.0218121
1.pos	-.0024206	.0216803	-0.11	0.911	-.0454234	.0405822
_cons	-.0564716	.234749	-0.24	0.810	-.5220951	.409152
var(e.credity2)	.0082655	.0011095			.0063335	.010787

```
.
```