POINT OF SALE (POS) BANKING MANAGEMENT AND CAPACITY EXPANSION OF MANUFACTURING FIRMS IN SOUTH EAST NIGERIA

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Abstract

This research examined Point of Sale (POS) banking management and capacity expansion of manufacturing firms in South East, Nigeria. The study was conducted to examine the relationship between each of android POS, virtual POS (ePOS), mobile POS (mPOS), Public Switched Telephone Network (PSTN) POS and capacity expansion of manufacturing firms in South East Nigeria. The study adopted the survey research design. Data were obtained from b primary source. The purposive sampling technique was adopted in the study. The Cronbach Alpha statistic was used to obtain a value of 0.76 as the instrument reliability ratio. Data analysis was committed to descriptive statistics and correlation analysis. The analysis was enabled by the use of SPSS software. The results showed that android POS improved capacity expansion of manufacturing firms; virtual POS influenced capacity expansion of manufacturing firms; mobile POS enhanced capacity expansion of manufacturing firms; and Public Switched Telephone Network (PSTN) improved capacity expansion of manufacturing firms. It was concluded that Point of Sale banking management improved capacity expansion of manufacturing firms in South East Nigeria. The researcher further submits that manufacturing firms that do not take POS banking seriously expose themselves to diverse impediments to capacity expansion. It was recommended that management should always ensure that android POS banking is often properly managed for the purpose of continuously improving capacity expansion in manufacturing firms. Management should also identify and deal with any factor that relegates the management of POS banking to the background as this would help for greater capacity expansion in manufacturing firms.

Key Words: *Point of Sale banking, management, android POS, virtual POS, mobile POS, public switched telephone network (PSTN) POS, capacity expansion.*

Introduction
Background of the Study

Manufacturing firms that wish to continuously improve on their capacity expansion abilities no doubt take appropriate steps to use and properly manage POS banking option for the achievement of their goals. The possible adoption of POS banking by many manufacturing firms in Nigeria today may not be unconnected to the near cashless economy which presently characterizes Nigeria's economic sector.

Nguyen (2022) opines that POS in banking means that one uses one debit card to purchase at the point of sale (POS) location. Also, Hayes (2022) asserts that a POS or point of sale is a device that is used to process transactions by retail customers. A POS may be a physical device in a brick-and-mortar store or a checkout point in a web-based store. The software for POS device is growing increasingly elaborate with features that allow retailers to monitor inventory and buying trends, track pricing accuracy and collect marketing data.

This present study focuses on the following types of POS which form the bedrock of POS management: android POS, virtual POS, mobile POS and PSTN POS. An android POS otherwise known as smart POS is a cloud-based payment system that allows developing and deploying multiple applications on an open platform. Charpentier (2022) opines that an android POS machine is a touchscreen card terminal with an android-based operating system. Android is an open software system created by Google, and it is what most (non-iPhone) smartphones use. Android terminals can access diverse payment methods and add-on apps such as point of sale (POS) software. Bhatia(2020) states that the benefits of an android POS for modern-day business as including higher efficiency with android operating system, longer battery life, versatile and adaptable, movement from queue busting experiences to anywhere payments, to contactless payments, better user experience; it leads to comfortable customer experience and it encourages business growth decisions.

Virtual POS is another type of POS banking examined in this study. it is a software-based payment solution that enables the merchants to accept payments from their customers arising from purchases made over the internet via credit or debit cards. Moid (2017) opines that the virtual POS is a solution that simplifies the credit and debit card processing and reduces the inconvenience associated with additional hardware and software. This solution allows merchants and other service providers to process credit and debit card transactions without direct impact of information by the customer. The merchant logs into his account and manages the process via a down board that cannot be accessed by the customer. Indeed, Axerve (2020) maintains that the virtual POS has zero maintenance and defects; it encourages greater offer with many payment systems; they are potentially available anytime, anywhere and from any device.

This study also investigates mobile POS banking as an integral part of the POS banking management. Mobile POS (mPOS) is a technology that enables merchants to process payments via their mobile device (smartphone or tablet) instead of cash register or POS terminal. It can be used to accept payments from credit, debit, and other card types as well as digital wallets such as Apple Pay, Google Pay, and Samsung Pay. The systems can also be used for inventory management, customer loyalty programmes and data analysis (shopify.com). Heaslip (2020)

opines that a mobile point of sale turns a smartphone or tablet into a cash register. This allows merchants to accept payments virtually anywhere – all one needs is a device, the mPOS platform an internet connection. Mobile POS platforms allow merchants to sell at farmers' markets, trade shows and art fairs, and to visit clients' homes.

The PSTN POS is yet another type of POS assessed in this study. it is a POS terminal connected to one's existing landline, that allows customers the convenience of swiping their debit/credit cards at a fixed location. It hosts customer stickiness and increases revenue; it is good for better cash management and speedy payment; it encourages flexible pricing options while accepting all network payments. The Public Switched Telephone Network (PSTN) is the world's collection of interconnected voice-oriented public telephone networks. It comprises all the switched telephone networks around the world and are operated by local, national or international carriers (Rosencrance, 2021). Roesncrance (2021) maintains that the networks provide the infrastructure and services for public telecommunication. A PSTN is a combination of telephone networks used worldwide, including telephone lines, fiber optic cables, switching centers, cellular networks, satellites and cable systems.

The management of POS with the adoption of android, virtual, mobile or PSTN POS may influence capacity expansion of manufacturing firms in South East Nigeria. Capacity expansion is the process of providing new facilities over time to meet rising demand. Spacey (2017) asserts that capacity includes things like labour and equipment that can be scaled to increase business output.

Growing an existing business often involves expansion of capacity in terms of plant, human resources, technological infrastructure, research and development facilities, etc. any major capacity expansion is a strategic decision that involves significant resource commitments and is often difficult to reverse. So such a decision has to be made carefully. Capacity expansion strategy is often narrowly applied to manufacturing. But in many businesses, there is little or no manufacturing (mbaknol.com). it was Michael Porter that stated that the decision to expand capacity has to take into account various factors like future demand, future input prices, likelihood of technological obsolescence, probable capacity expansion by competitors, future industry capacity and individual market shares. The main risk in capacity expansion strategy is the creation of excess capacity which intensifies competition as players try to increase capacity utilization and profits come down(mbanol.com). This is the reason why Rajasekaran (2022) maintains that it is important to first of all do capacity planning enroute capacity expansion.

This study on POS banking management and capacity expansion of manufacturing firms in SE Nigeria is geared towards investigating how the management of POS banking measured with the instrumentality of various types of POS may influence expansion of capacity in manufacturing firms. This is with a view to bridging research gaps while contributing to knowledge.

Statement of the Problem

Point of Sale (POS) banking in Nigeria no doubt, was intended to make financial lives of both corporate and individual persons easier. This is also the ideal situation – a situation whereby businesses and other persons may have access to POS banking services at their door steps and in fact, at their door convenience. Such should of course have the capability to make businesses experience more capacity expansion. The researcher is however convinced that there are still some undesired gaps between POS banking management and capacity expansion of

manufacturing firms in Nigeria. Many manufacturing firms seem not to have adequately employed the tools of android POS management, Virtual POS management, mobile POS management and PSTN POS management to launch themselves on the path of success as it relates to capacity expansion. This current situation implies that many manufacturing enterprises may not have improved their capacity expansion over perceived poor adoption or poor utilization of opportunities provided by POS banking management.

Many scholars have indeed made empirical efforts to investigate the usage of POS banking management by manufacturing businesses in Nigeria. However, the researcher has observed that those empirical studies did not show how each of android POS, virtual POS, mobile POS and PSTN POS influenced capacity expansion. Ekwueme, Egbinike and Amara (2020) did 'an empirical assessment of the operational efficiency of electronic banking: evidence of Nigerian banks'. They focused on the banking industry and they did not investigate the relationships covered in this present study. Rather, they concentrated on issues of insecurity in banking transactions as well as on total credit facilities. Also, Nwakoby, Okoye, Ezejiofor, Anukwu and Ihediwa (2020) assessed 'electronic banking and profitability: empirical evidence from selected banks in Nigeria'. They focused on Deposit

Money Banks. They did not examine the link between POS banking management. Agwu (2020) handled 'empirical determinants of consumers' uptake of electronic banking in selected states of Nigeria'. The extant literature-study centered on consumer decision making process for the identification of factors that consumers use when deciding between electronic banking and non-electronic banking. The study did not examine any of the relationship handled in this study. It did not also assess the manufacturing industry.

The foregoing shows that there is need to investigate further on POS banking management (android POS management, virtual POS management, mobile POS management, PSTN POS management) so as to examine how it influences capacity expansion. This is intended to cover research gaps and contribute to knowledge.

Objectives of the Study

The major objective of this study is to investigate Point of Sale (POS) banking management and capacity expansion of manufacturing firms in South East Nigeria. The specific objectives of the study include to:

I.   examine the relationship between android POS management and capacity expansion of manufacturing firms in South East Nigeria.

II. access how virtual POS management influences capacity expansion of manufacturing firms in South East Nigeria.

III. investigate the relationship between mobile POS and capacity expansion of manufacturing firms in South East Nigeria.

IV. evaluate the relationship between Public Switched Telephone Network(PSTN) and capacity expansion of manufacturing firms in South East Nigeria.

Research Questions

Based on the objectives of the study, the researcher developed the following research questions:

i.   What is the relationship between android POS management and capacity expansion of manufacturing firms in South East Nigeria?

ii.   How does virtual POS management influence capacity expansion of manufacturing firms in South East Nigeria?

iii.   To what extent does mobile POS affect capacity expansion of manufacturing firms in South East Nigeria?

iv.   What is the relationship between Public Switched Telephone Network (PSTN) and capacity expansion of manufacturing firms in South East Nigeria?

Hypotheses

In order to answer the research questions, the researcher posed the following set of null hypotheses:

H_{01}:   There is no significant relationship between android POS management and capacity expansion of manufacturing firms in South East Nigeria.

H_{02}:   Virtual POS management does not significantly influence capacity expansion of manufacturing firms in South East Nigeria.

H_{03}:   Mobile POS does not significantly affect capacity expansion of manufacturing firms in South East Nigeria.

H_{04}:   There is no significant relationship between Public Switched Telephone Network (PSTN) and capacity expansion of manufacturing firms in South East Nigeria.

Scope of the Study

The researcher concentrates on manufacturing firms in the brewery sub-sector in South Eastern States in Nigeria. The South Eastern States in Nigeria are: Abia, Anambra, Imo, Enugu and Ebonyi States. The study concentrates on Nigeria Breweries Plc, Enugu; Guinness Nigeria Plc, Aba; and International Breweries Plc, Onitsha, Lopa Energy Company Limited Abakaliki and Aluminium Extrusion industries Plc Ikeduru. Therefore, the geographical scope includes Enugu, Aba, imo, Ebonyi, and Anambra.

The content scope includes the relationship between android POS and capacity expansion; virtual POS and capacity expansion; mobile POS and capacity expansion; as well as Public Switched Telephone Network (PSTN) and capacity expansion.

The unit scope of the study includes the functional units in the organizations especially the Operations, Human capital, Accounting/Finance and Marketing units of the study manufacturing firms.

Significance of the Study

The significance of the study shows those that will benefit from the study and how they will benefits. They include manufacturing firms, managers, customers of different banks will be exposed to the need to be computer literate so as to emberace opportunities for achieving satisfaction in business dealings**.**

Competitors in the manufacturing sector will become conscious of consistent updating of their IT infrastructures, skills and processes so as to provide effectively the POS banking needs of

customers. They will henceforth make innovativeness their watch-wood. The government will be encouraged to always create conducive environment for business development in the face of digitized business era which thoroughly accommodates POS banking services.

Also, security agencies like Economic and Financial Crimes Commission (EFCC) and the Police as well as Independent Corrupt Practices Commission (ICPC) will understand how criminals use digital infrastructures to penetrate fraud with a view to being ever-ready to detect and deal with fraud using the same infrastructures especially as it relates to POS infrastructures.

Review of Related Literature

In this section, the researcher reviews reviewed related literatures on Point of Sale banking management and capacity expansion. The section comprises of conceptual, theoretical and empirical reviews.

Conceptual Review

The researcher used the following operational conceptual framework to show the variables and measures in the study:

Android POS Management

Otherwise called smart POS, Android POS is a cloud-based payment system that allows developing and deploying multiple applications on an open platform. Charpentier (2022) opines that an android POS machine is a touchscreen card terminal with an android-based operating system. Android is an open software system created by Google, and it is what most(non-iPhone) smartphones use. Android terminals can access diverse payment methods and add-on apps such as point of sale(POS) software. Bhatia(2020) states that the benefits of an android POS for modern-day business as including higher efficiency with android operating system, longer battery life, versatile and adaptable, movement from queue busting experiences to anywhere payments, to contactless payments, better user experience; it leads to comfortable customer experience and it encourages business growth decisions.

Virtual POS Management

Virtual POS is a software-based payment solution that enables the merchants to accept payments from their customers arising from purchases made over the internet via credit or debit cards. Moid(2017) opines that the virtual POS is a solution that simplifies the credit and debit card processing and reduces the inconvenience associated with additional hardware and software. This solution allows merchants and other service providers to process credit and debit card transactions without direct impact of information by the customer. The merchant logs into his account and manages the process via a down board that cannot be accessed by the customer. Indeed, Axerve (2020) maintains that the virtual POS has zero maintenance and defects; it encourages greater offer with many payment systems; they are potentially available anytime, anywhere and from any device.

Mobile POS Management

Mobile POS (mPOS) is a technology that enables merchants to process payments via their mobile device (smartphone or tablet) instead of cash register or POS terminal. It can be used to accept payments from credit, debit, and other card types as well as digital wallets such as Apple

Pay, Google Pay, and Samsung Pay. The systems can also be used for inventory management, customer loyalty programmes and data analysis (shopify.com). Heaslip (2020) opines that a mobile point of sale turns a smartphone or tablet into a cash register. This allows merchants to accept payments virtually anywhere – all one needs is a device, the mPOS platform an internet connection. Mobile POS platforms allow merchants to sell at farmers' markets, trade shows and art fairs, and to visit clients' homes.

Public Switched Telephone Network (PSTN) Management

The PSTN POS is yet another type of POS assessed in this study. it is a POS terminal connected to one's existing landline, that allows customers the convenience of swiping their debit/credit cards at a fixed location. It hosts customer stickiness and increases revenue; it is good for better cash management and speedy payment; it encourages flexible pricing options while accepting all network payments. The Public Switched Telephone Network(PSTN) is the world's collection of interconnected voice-oriented public telephone networks. It comprises all the switched telephone networks around the world and are operated by local, national or international carriers (Rosencrance, 2021). Roesncrance(2021) maintains that the networks provide the infrastructure and services for public telecommunication. A PSTN is a combination of telephone networks used worldwide, including telephone lines, fiber optic cables, switching centers, cellular networks, satellites and cable systems.

Capacity Expansion

Capacity expansion is the process of providing new facilities over time to meet rising demand. Spacey (2017) asserts that capacity includes things like labour and equipment that can be scaled to increase business output. Mba (2022) opines that growing an existing business often involves expansion of capacity in terms of plant, human resources, technological infrastructure, research and development facilities, etc. any major capacity expansion is a strategic decision that involves significant resource commitments and is often difficult to reverse. So such a decision has to be made carefully. Capacity expansion strategy is often narrowly applied to manufacturing. But in many businesses, there is little or no manufacturing.

Theoretical Framework
The study employed the following theory to beef up the study.

Technology Acceptance Model (TAM)

Priyanka (2012) opines that Technology Acceptance Model (TAM) Technology Acceptance Model has been a theory that is most widely used to explain an individual acceptance of information system .This study has reviewed numerous literatures available in the area and technology by individual users. TAM has been widely studied and verified by different studies that examine the individual technology acceptance behavior in different information systems constructs. In TAM model, there are two factors: **perceived usefulness and perceived ease of use**, and they are relevant in computer use behaviors. Davis defines perceived usefulness as the prospective user's subjective probability that using a specific application system will enhance his or her job or life performance. Perceive ease of use (EOU) can be defined as the degree to which the prospective user expects the target system to be free of effort. According to TAM, ease of use and perceived usefulness are the most important determinants of actual system use. These two factors are influenced by external variables.

The main external factors that are usually manifested are social factors, cultural factors and political factors. Social factors include language, skills and facilitating conditions. Political factors are mainly the impact of using technology in politics and political crisis. The attitude to use is concerned with the user's evaluation of the desirability of employing a particular information system application. Behavioral intention is the measure of the likelihood of a person employing the application Priyanka (2012). POS banking management could be of great usefulness to both manufacturing firms and their customers. The firms may through increase in sales volume occasioned by higher patronage over POS electronic banking, gather adequate resources for facing their capacity expansion challenges.

The customers themselves may most likely escape the danger of moving around with raw cash in their quest to purchase products from manufacturing firms. Also, the perceived ease of use which the TAM Model emphasizes can be driven by the use of POS banking. This is applicable to both manufacturing entities and their customers.

Empirical Review

The researcher used the following empirical evidences to improve the study: Ezeoha (2005) handled the emerging trend in Internet banking in Nigeria is of global concern. For one thing, the Nigerian economy is a strong force in Africa. The country also has a high reputation for Internet-related frauds in the world, having been regarded as the headquarters of Advance Fee Fraud (419). The code ''419'' is named after Section '419' of the Nigerian Criminal Code that deals with "obtaining property by false pretences; Cheating."

On the home front, bank frauds, forgeries, money laundry, insider abuse and erosion of public confidence constitute a set of disturbing issues in the present-day Nigerian banking system. This explains why regulation has become of paramount importance in the entire Internet banking development process. This paper examines the current regulatory efforts of the Central Bank of Nigeria to ensure successful practice of Internet banking in Nigeria . It identified lapses in the existing regulations on Internet banking, and argues that without a comprehensive regulation and improved access to information infrastructure, it might be difficult for meaningful advances to be made in this field of banking.

Okeke, Nwatu and Amaechi (2017) examined the Predicting Consumer Adoption of Point of Sale (POS) e-Payment System in Nigeria Using Extended Technology Acceptance Model. We extended the TAM by adding two variables: consumer awareness and security of operations to ascertain how they predict the original TAM constructs: PU and PEOU to predict POS adoption. The study was based on a sample of 400 respondents in Awka, Nigeria; of which 234 responded. Questionnaire was the instrument for data collection and was designed with five point likert scale. Four items were used to measure each of the variables.

The analysis was done with SEM with the aid of AMOS 23 software. This study has established that PEOU and PU positively and significantly impact POS adoption in Nigeria. It also demonstrated that security impacts PEOU positively and significantly but insignificantly on PU. Consumer awareness (CA) significantly and positively impact PU but impact on PEOU is not significant. The study has implications for research and practice. Further researches should be

conducted with further extensions to show the mediation and or moderation impacts of the two variables.

Adeoti (2013) analyzed the challenges to the efficient use of point of sale (POS) terminals in Nigeria. Socio economic characteristics of users and non-users were also examined. Cross sectional data were collected from 650 randomly sampled respondents from 20 local government areas of Lagos State, Nigeria. Data collected were analyzed using Friedman and Kendall ranking order test. The finding of this study showed that that the most challenging factor to the efficient use of POS is network failure, frequent power outage; limited numbers of POS per merchant store where they are available, security of communication over the network and unavailability of the POS at all merchant stores. Efforts at improving the security of transactions is recommended in order to drastically reduce excess cash flow especially in developing economies.

Gap Identified in Literature

Empirical studies accessed by the researcher in the area of electronic banking did not examine the relationship between android POS and capacity expansion; virtual POS and capacity expansion; mobile POS and capacity expansion; Public Switched Telephone Network (PSTN) and capacity expansion. This present study fills this huge research gap.

Methodology

The study adopts the survey research design. The questionnaire is the major instrument for data collection. The population of the study consists of the staff of Nigeria Breweries Plc, Enugu (290); Aluminium Extrusion Industry Plc, Inyishi (214); Guinness Nigeria Plc, Aba(221); Lopa Energy Company Limited, Abakiliki (138) and International Breweries Plc, Onitsha(205). The total population of the study is 1068. The Taro Yame's formula was adopted to obtain a sample size of 291. Sample size proportion was also used in determining the number of questionnaire copies that would be administered on each of the study organizations. The data sources consist of primary and secondary sources. The primary sources are the survey tools (questionnaire and observations) while the secondary sources include journals, texts and other materials. Validity of the questionnaire was done by showing the instrument to the supervisors and to other experts for their corrections and inputs (face validity). It was also ensured that all the items in the questionnaire were strictly based on the research questions (content validity).

The reliability was conducted by way of carrying out a pilot study and subjecting the outcomes of the pilot study to Cronbach Alpha Statistic. The formula is:

$$\alpha = \frac{N \cdot \overline{C}}{\overline{v} + (N - 1) \cdot \overline{C}}$$

Where:

N　　=　　The Number of items

$\overline{C}$　　=　　C-bar = the average inter-item covariance among the items

$\overline{V}$　=　V - bar = the average variance.

To compute the sample size proportion, we use the formula:

$$k = \frac{w_i}{N} \times n$$

Where;

$k = sample\ size\ proportion,$

$w_i = no.\ of\ \text{employees}\ for\ individual\ firm$

$N = population\ size$

$n = sample\ size$(See Appendix)

Table 3.2: Deposit Money Banks for the Study and the Proportion Size

STUDY DMB	STAFF POPULATION	SAMPLE SIZE PROPORTIONN (k)
Zenith Bank Plc, Owerri.	170	59
GTB, Awka.	180	63
Access Bank Plc, Umuahia	160	56
		52
UBA, Enugu	150	31
Ecobank, Abakiliki	90	
Total	750	261

A reliability ratio of 0.76 (76%) was obtained. Data analysis was committed to descriptive statistics of mean, percentages and standard deviation. Correlation analytical technique was used to test hypotheses. The computations were aided by Statistical Package for Social Sciences (SPSS) version 23. The formula for correlation is:

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{[n\sum x^2 - \sum(x)^2]\ [n\sum y^2 - \sum(y)]^2}}$$

The decision rule: The rejection of the null hypothesis was based on the P-Value as the null hypothesis is rejected if P-value < 0.05.

QUESTIONNAIRE ANALYSIS

Out of the 291 questionnaire copies distributed to the respondents, only 256 copies were properly filled and returned. This means 88 % return.

Research Question 1:

What is the relationship between android POS management and capacity expansion of manufacturing firms in South East Nigeria?

Table 1: Respondents' responses on the relationship between android POS management and capacity expansion of manufacturing firms in South East Nigeria

Q/No	Item	SA	A	UN	D	SD	N	Mean	Std. Dev.
1	Android POS banking management contributes substantially to capacity expansion in manufacturing enterprises.	133	63	25	20	15	256	4.09	0.832
2	Management of manufacturing firms does everything within its powers to equip workers with all the necessary skills to properly android POS for capacity expansion.	103	73	33	26	21	256	3.82	0.843

Field Survey (2023)

The Table 1 above presents data from responses by the respondents under study. The result also disclosed a strong agreement by the respondents on their opinion on the relationship between android POS management and capacity expansion of manufacturing firms in South East Nigeria. The results further shows that the respondents agreed to the facts that: android POS banking management contributes substantially to capacity expansion in manufacturing enterprises ($\bar{\bar{x}} \pm \text{S.D}$ of 4.09 ± 0.832); management of manufacturing firms does everything within its powers to equip workers with all the necessary skills to properly android POS for capacity expansion (with a $\bar{\bar{x}} \pm \text{S.D}$ of 3.82 ± 0.843).

Research Question 2:

How does virtual POS management influence capacity expansion of manufacturing firms in South East Nigeria?

Table 2: Respondents' responses on virtual POS management and capacity expansion of manufacturing firms in South East Nigeria

Q/No.	Item	SA	A	UN	D	SD	N	Mean	Std. Dev.
3	With virtual POS management, capacity expansion is boosted in manufacturing firms in South East Nigeria.	107	66	42	27	14	256	3.88	0.921
4	Many workers have been trained on the workability of virtual POS management for effective capacity expansion.	125	72	31	23	5	256	4.13	0.877

Field Survey (2023)

The table 2 above presents data from responses by respondents on the relationship between virtual POS management and capacity expansion of manufacturing firms in South East Nigeria. The results show that majority of the respondents affirmed to the statements. There is a high level agreement by the respondents on the opinion that with virtual POS management, capacity expansion is boosted in manufacturing firms in South East Nigeria as the result accounted for a mean of 3.88 and a standard deviation of 0.921. The result has indicated that the majority of the respondents agreed to the item statement that many workers have been trained on the workability of virtual POS management for effective capacity expansion (with a $\bar{x} \pm \text{S.D}$ of 4.13 ± 0.877).

Research Question 3:

To what extent does mobile POS management affect capacity expansion of manufacturing firms in South East Nigeria?

Report on Research Question 3 is presented on Table 3

Table 3: Respondents' responses on the relationship between mobile POS management and capacity expansion

Q/No.	Item	SA	A	UN	D	SD	N	Mean	Std. Dev.
5	Mobile POS management has always been a critical factor that leads to enhanced capacity expansion in manufacturing firms in South East Nigeria.	139	59	26	18	14	256	4.14	0.831
6	There are still workers who have not totally but partially embraced mobile POS management for improved capacity expansion.	149	55	31	13	8	256	4.27	0.694

Field Survey (2023)

The table 3 above presents data from responses by the respondents under study. The result also disclosed a good agreement by the respondents on their opinion on the relationship between mobile POS management and capacity expansion. The results further show that the respondents agreed to the facts that: mobile POS management has always been a critical factor that leads to enhanced capacity expansion in manufacturing firms in South East Nigeria with a ($\bar{\bar{x}} \pm$ S. D of 4.14 ± 0.831; there are still workers who have not totally but partially embraced mobile POS management for improved capacity expansion (with a $\bar{\bar{x}} \pm$ S. D of 4.27 ± 0.694).

Research Question 4

What is the relationship between Public Switched Telephone Network (PSTN) management and capacity expansion of manufacturing firms in South East Nigeria?

Table 4: Respondents' responses on Public Switched Telephone Network (PSTN) management and capacity expansion of manufacturing firms in South East Nigeria

Q/No.	Item	SA	A	UN	D	SD	N	Mean	Std. Dev.
7	Management of PSTN gives greater hope for improved capacity expansion in manufacturing firms in South East Nigeria.	134	55	44	15	8	256	4.14	0.775
8	Management will always develop policies to attract more workers to prudent management of PSTN for enhanced capacity expansion.	123	49	38	27	19	256	3.90	0.828

Field Survey (2023)

The table 4 above presents data from responses by respondents on the relationship between Public Switched Telephone Network (PSTN) management and capacity expansion of manufacturing firms in South East Nigeria. The results show that majority of the respondents affirmed to the statements. There is a high level agreement by the respondents on the opinion that management of PSTN gives greater hope for improved capacity expansion in manufacturing firms in South East Nigeria as the result accounted for a mean of 4.14 and a standard deviation of 0.775. The result has indicated that the majority of the respondents agreed to the item statement that: management will always develop policies to attract more workers to prudent management of PSTN for enhanced capacity expansion (with a $\bar{x} \pm$ S.D of 3.90 ± 0.828).

Testing of Hypotheses

H$_{01}$:   There is no significant relationship between android POS management and capacity expansion of manufacturing firms in South East Nigeria.

Table 5: Correlation analysis between android POS management and capacity expansion of manufacturing firms in South East Nigeria

Item	Mean	Standard Deviation	Correlation Coefficient	P-value
Android POS management	4.09	0.832	0.791	0.001
Capacity expansion	3.82	0.843		

SPSS Correlation Analysis Output (2023).

The result on table 5 presents the correlation analysis between android POS management and capacity expansion of manufacturing firms in South East Nigeria. The result shows a p-value of 0.001 and correlation coefficient of 0.791. The result shows a p-value less than 0.05 being the level of significance; therefore rejecting the null hypothesis and accepting the alternative hypothesis. Therefore, the correlation coefficient between android POS management and capacity expansion of manufacturing firms in South East Nigeria is statistically significant. Therefore, there is a significant relationship between android POS management and capacity expansion of manufacturing firms in South East Nigeria.

H$_{02}$:   Virtual POS management does not significantly influence capacity expansion of manufacturing firms in South East Nigeria.

Table 6: Correlation analysis between virtual POS management and capacity expansion

Item	Mean	Standard Deviation	Correlation Coefficient	P-value
Virtual POS management	3.88	0.921	0.825	0.001
Capacity expansion	4.13	0.877		

SPSS Correlation Analysis Output (2023).

The result on table 6 presents the correlation analysis between virtual POS management and capacity expansion. The result shows a p-value of 0.001 and correlation coefficient of 0.825. The result shows a $p-value \leq 0.05$ level of significance, thereby rejecting the null hypothesis and accepting the alternative which states that there is a significant relationship between virtual POS management and capacity expansion.

H₀₃: Mobile POS management does not significantly affect capacity expansion of manufacturing firms in South East Nigeria.

Table 7: Correlation analysis between mobile POS management and capacity expansion of manufacturing firms in South East Nigeria

Item	Mean	Standard Deviation	Correlation Coefficient	P-value
Mobile POS management	4.14	0.831	0.702	0.001
Capacity expansion	4.27	0.694		

SPSS Correlation Analysis Output (2023).

The result on table 7 presents the correlation analysis between mobile POS management and capacity expansion of manufacturing firms in South East Nigeria. The result shows a p-value of 0.001 and correlation coefficient of 0.702. The result shows a p-value less ≤ 0.05 level of significance; therefore rejecting the null hypothesis and accepting the alternative which states that there is a significant relationship between mobile POS management and capacity expansion of manufacturing firms in South East Nigeria.

H₀₄: There is no significant relationship between Public Switched Telephone Network (PSTN) management and capacity expansion of manufacturing firms in South East Nigeria.

Table 8: Correlation analysis between Public Switched Telephone Network (PSTN) management and capacity expansion of manufacturing firms in South East Nigeria

Item	Mean	Standard Deviation	Correlation Coefficient	P-value
Public Switched Telephone Network (PSTN) management	4.14	0.775	0.733	0.001
Capacity expansion	3.90	0.828		

SPSS Correlation Analysis Output (2023).

The result on table 8 presents the correlation between Public Switched Telephone Network (PSTN) management and capacity expansion of manufacturing firms in South East Nigeria. The result shows a p-value of 0.001 and a correlation coefficient of 0.733. The result shows a $p-value < 0.05$ level of significance; thereby rejecting the null hypothesis and accepting the alternative.

Therefore, the correlation coefficient between Public Switched Telephone Network (PSTN) management and capacity expansion of manufacturing firms in South East Nigeria is statistically significant. This means a positive and a strong relationship existing between Public Switched Telephone Network (PSTN) management and capacity expansion of manufacturing firms in South East Nigeria.

Findings

After the data analysis, the study found that:

I. Android POS management improved capacity expansion of manufacturing firms in South East Nigeria

II. Virtual POS management significantly influenced capacity expansion of manufacturing firms in South East Nigeria.

III. Mobile POS management significantly and positively affected capacity expansion of manufacturing firms in South East Nigeria.

IV. Public Switched Telephone Network (PSTN) management enhanced capacity expansion of manufacturing firms in South East Nigeria.

Conclusion and Recommendations

Conclusion

The researcher concludes that POS banking management greatly boosted capacity expansion in manufacturing firms in South East Nigeria. POS banking indices like android POS, virtual POS, mobile POS and PSTN POS really triggered capacity expansion in manufacturing firms in South East Nigeria.

The study therefore submits that any manufacturing enterprise that relegates POS banking management to the background may not easily achieve its short term and long term goals.

Recommendations

Based on the findings, the researcher made the following recommendations:

I. Management should always ensure that android POS management is often adopted for the purpose of continuously improving capacity expansion in manufacturing organizations.

II. Workers should always take virtual POS seriously for improved capacity expansion.

III. Organizational managers should educate the workers more on the need for embracing mobile POS for the sake of continuously improving capacity expansion in such enterprises.

IV. Management should always expose the organizational staff to the merits of PSTN management especially those merits that may enhance capacity expansion.

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