

Original Paper

Challenges Facing the Use of Point Of Sale POS from Merchants and Banks' Employees Perspective in Sudan

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Abstract

This study aims to identify challenges facing the use of POS in Sudan from the perspectives of merchants and banks' employees. An Exploratory study was applied to capture the perspective of the merchants using questionnaires to collect data on their views, while a qualitative technique using focus group was adopted to collect data on banks employees' perception on challenges facing POS in Sudan. (150) questionnaires were distributed in Khartoum. Ultimately (141) responses were received and checked for completeness and consistency and were randomly cross checked for accuracy of the data. (100) banks' Employess from the marketing and IT departments participated in the focus group discussion.

Based on the merchants 'perspective the main challenges facing the use of use of POS in Sudan is the legal and regulatory hurdles followed by operational challenges including poor network reliability. Banks' employees perceive that the challenges are manifested in the lack of (know how) in addition to the need to develop an incentive plan that encourages customers to use POS more often. The study recommends that further investment should be put in the network and the IT infrastructure in addition to the need to revisit the regulatory procedure governing the relationship between the different stakeholders of POS. Larger sample size to be employed.

Keywords

Point of Sales (POS), E-payment, Merchants, Bank's Employees, Sudan

1. Introduction

The advancement in the internet and the information technology has revolutionized the way banks conduct business. Traditionally banks focus on attracting deposits and settlements of financial obligations, but with the evolution of electronic banking platforms, especially mobile banking technologies, banks have become more involved in the payment aspects of banking activities. The emergence of the new electronic payment technologies such as Point of Sales (POS), Automatic Teller Machine (ATM), internet banking, telephone banking and mobile phones has improved the way customers are served and help the society in general to become less dependent on cash (Kelvin, 2012). Sujith and Julie (2017) argue that e-channels can save time and effort to conduct transactions over an electronic network. Additionally, it has been argued that the use of e-payment improve the way financial institutions do their business (cf. Ferreira & Cravo, 2004; Adekola et al., 2008; Melnikas, 2010; Pinto & Ferreira, 2010; Kim et al., 2011; Sawng et al., 2011).

POS as one of the e-banking delivery channels was deployed by the mid of the nineteen eighties, and it was used by retailers for the purpose of collecting sales data and ordering and tracking inventory control systems as well as facilitating e-payment channels (James, 2003). It is believed that the use of POS in the retail sector has positive impact on sales increase and gross profit (deloitte, 2020).

Another study found that the deployment of POS causes sales increase in the rage of 10 to 24% in the first two years, although it settled into a 8 to 10% increase afterward, but retailers who make use of customer databases are more capable of maintaining sales increases (James, 2003).

Despite the known benefits of deploying POS technology in retrieving cash to banks, increasing sales, achieving profits to merchants and the convenience it provides to customers, POS, as many other e-payment platforms, are faced by some problems such as delays in accessing services provided (Olakah, 2012). The lack of access to reliable power supply is one of the challenges that face e-payments channels, also poor telecommunications infrastructure, limited readiness by banks, cultural factors, poor legal and regulatory framework are among the constraints that hindered the use and progress of e-payment channels (Wondwosson et al., 2005, Kumaga, 2010; Tadesse & Kidan, 2005; Bassey, 2008). In a specific case of POS challenges, in Ghana, the research found that the lack of the acceptance channel by users, ignorance, network failures are among the main challenges that affect the deployment of the channels. Moreover some sales people in Ghana believe that online payments deprive them from tips that they may receive from customers. The delay in settling some transactions due to network or power supply failure affect the use of POS by many users (Kumaga, 2010).

Similar to other countries POS in Sudan has attracted the attention of the authorities in the country. POS was introduced in the country in 2007. The number of POS is steadily growing totaling around (41.815) according to the (EBS, 2021) which is still considered low by the international standards.

As mentioned by (Khattab.et.al, 2020), the electronic payments in Sudan is offered through different means, which was covered by the seventh axis of the Central Bank of Sudan strategy for the last few years. The total number of POS by the beginning of 2021 was (41.815), with total number of

transactions (1,352,919) see Table (1).

Table 1. Illustrate Figures on POS Payment in Sudan

Channel	2013	2014	2015	2016	2017	2018	2019	2020	2021
POS	372	787	2.885	3.480	3.905	16.162	32.384	39.076	41.815
Total	31.50	119.90	296.86	692.79	898.799	369.578	1.107.317	911.697	1.352.919
Transactions	6	7	6	8					
Total	9.973.	30.663	78.959.	156.15	263.070.	540.816.	1.925..511.	2.290.95	
Amount in SDG	000	.826	304	3.807	353	263.415	986.54	1.835.27	14.552.048.4 17.09

2. Literature Review

POS is a special machine which is designed to provide automatic services to customers, merchants and different service institutions. Each POS is connected directly to the account of the merchant to complete the financial transactions (Adam, 2013). According to a report by Horus Development Finance in 2011, the POS is an electronic transfer system for money that allows card holder to pay for purchases from merchants. A Point of Sale (POS) terminal consists of hardware and software. Part of this equipment is the POS machine, which is a special device for offering e-payment services for the merchant and customer.

According to (EBS, 2006) POS In Sudan, is another e-payment method that is connected with the national/private switches allowing Banks' customers to use their ATM cards to pay for purchases through bank account. A POS terminal accomplishes the selling transaction by a sales person available interface. A similar system permits the establishment and printing of the receipt (Shittu, 2010). According to Gomzin, 2014 (Cited in SANS Institute, 2014), there are two POS payment process stages: authorization is related to the payment process where the purchase is confirmed, Followed by settlement which focuses on settling the account balances between the parties (i.e., Merchant, acquirer, and issuer).

The unique nature of the services offered by POS to customers, merchants and banks is tangible. POS in many countries was found to help businesses keep records of transactions and manage stock more effectively; it also decreases the need for paperwork and provides quick and safe services to customers. At the same time it decreases cash-payment transactions which are expected to help retain money within the banking sector (Peffer & Ma, 2003).

Scholars investigated the challenges that face e-payment methods; POS. A study by (Amanuel, 2018)

investigates problems related to the implementation of POS terminal system, and shows that the lack of employees' skills related to POS terminal and attitudes of tellers, low support and follow up, lack of integration between departments, are considered as obstacles. Another study by Beza (2014), highlighted the main challenges facing adoption of e-banking services. I.e. POS in Ethiopia are: lack of suitable legal and regulatory framework, absence of financial networks that link different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet, security concerns.

Another study by Zulu (2006), concluded that connectivity failure in telephone lines; low internet bandwidth; high internet cost, unavailability of dedicated data service networks; and close financial networks as well as frequent power interruption, lack of proper legal and regulatory framework are major e- payment challenges in Africa.

Also a study by Gardachew (2010), explores challenges of e-banking in Ethiopia, in addition to the above one, the study revealed that the lack of suitable legal and regulatory frameworks for E-commerce and e-payments, political instability in neighboring countries, high rates of illiteracy and absence of financial networks that links different banks are among the challenges facing the use of e-banking systems.

Furthermore, a study conducted by Adeoti (2013), identified the challenging factors of POS as: 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.

The study of Kumaga (2010) investigated the challenges of implementing and using electronic payments in Ghana. The challenges as discussed in the study can be classified into four main groups namely: security, infrastructure, legal & regulatory issues, as well as socio-cultural issues.

Another study conducted by Wondwossen and Tsegai (2005) defined the major challenges of e-payment as poor telecommunication infrastructure, frequent power disruption, resistance of people to new payment mechanisms, lack of skilled manpower, unavailability of payment laws. And regulations, particularly for e-payment.

Most of the studies investigating challenges facing POS in the developing countries do not show the main problems facing POS from the banks' employees and merchants' perspectives as this research intends to do. Thus, this study seeks to investigate the main challenges facing the use of POS in Sudan.

2.1 The State of E-Payment Technology in Sudan

In Sudan, the Central Bank of Sudan (CBOS) has a key role in developing banking technology. In 1998 the CBOS has launched the comprehensive banking policy which focuses on developing the technology in the banking sector. At the same time the CBOS has developed a strategy covering the period (1999-2010) to automate the sector. This strategy is called "Technology Horizons Strategy". As a result a specialized banking technology department was established in each bank to develop and improve banking information systems, networks, etc. At that time these departments were supervised by the General Directorate of Banking Technology at CBOS whose main responsibilities were to

develop and update national banking technology, set policies, ensure that the banking technology departments adhere to the regulations and measures and encourage banks to use computer networks to conduct banking transactions electronically. All banks in Sudan are connected to Society for Worldwide Interbank Financial Telecommunication (SWIFT) (Alhassan, 2018).

CBOS has taken the initiative of establishing the Electronic Banking Services Company (EBS), in partnership with commercial banks and Sudanese Telecommunication Company (Sudatel). EBS is considered the technical wing for the CBOS and the technical operational partner for the sector. The main purpose of the company is to implement the banking technology projects and to operate national payment systems. EBS was also concerned with developing the required IT infrastructure, and adapting the banking technology to the Sudanese context. As a result, the banking sector in Sudan has witnessed obvious technological changes that are suitable for Sudan special political and economic circumstances, for example, the establishment of A Computer-based Clearing House (ACH) a settlement facility that processes the exchange of electronic transactions between participating banks in Sudan. ACH was followed by setting the national switch, which is an e-system that provides a joint venture network that connects the ATMs and POS network, with all parties involved in these services such as banks, financial institutions, merchants, etc. The national switch is responsible for transferring financial transactions and making financial settlements between all parties involved, managing ATM, POS networks, devices and issuing and managing cards. Based on to the relative success of deploying the banking technology in Sudan, and the wide use of plastic cards, the concerned, authorities in the country decide to make use of these cards in another e-channel that was the POS, especially that customers are familiar with using plastic cards. In 2007 POS was launched in Sudan by Faisal Islamic bank and Bank of Khartoum (Ismail, 2012).

The paper is organized into six sections. The first section is the introduction of the study, followed by second and third sections which examine the problem statement and the study objectives. The fourth section presents the study methodology. The fifth section discusses the findings and discussion and section six draws conclusions.

2.2 Problem Statement

Sudan economy, as many other developing countries, is cash-based, most of the transactions and business deals are carried out using cash. Most of the people in Sudan keep large amounts of cash on hand and only 6% of the populations have bank accounts (omerabi, 2018). The financial authorities in Sudan have paid special attention to e-payment means including POS. it has been included in the seventh axis of the Central Bank of Sudan strategy for the last few years, and this has contributed positively in the penetration of e-payment instruments especially with the big shortage in bank notes in 2018 (khattab et al., 2020).

CBOS has taken different measures to reduce dealing with cash and encourage the use of POS. For example, a new decree (212/2018) was issued to limit cash withdrawal from ATM to 20.000 SDG per month as the maximum limit per account. Additionally transactional fees related to the use of POS

were waved in 2019.

Despite much progress and continuous efforts to encourage and enhance the use of POS, and the issue of decree (2/2018) to activate and deploy POS, it is noticed that POS still face many challenges that hinder its use. According to a report (CBOS, 2019) the total number of active POS terminals is only (32.384).

Generally, the POS challenges are related to the banks, merchants and the customers (Omerabi, 2013). For example merchants are unwilling to use POS and at the same time, banks have not managed to produce tangible benefits from POS despite their various efforts to boost sales and services through this channel. Customers also experience difficulties when conducting transactions. Furthermore, taking into account the current economic situation in Sudan particularly with respect to cash-shortage and the need to apply innovative means to facilitate financial exchange and business transactions, it has become necessary to investigate challenges facing the use of POS from the banks' employees and merchants perspectives, and ultimately to provide solutions and suggestions to increase the use of POS by customers and merchants. It is further noted that CBOS and banks cannot encourage the widespread of POS without good and precise identification of the problems that face the application of POS in Sudan.

2.3 Study Objectives

Therefore, the main objectives of this study are to:

- Identify the state quo of POS in Sudan.
- Investigate the challenges facing POS from banks' employees perspective.
- Determine the challenges facing POS from merchant's perspective.

3. Study Methodology

3.1 Population and Sampling

Population was defined by Mugenda and Mugenda (2003), to include all groups of people, events or objects that share common noticeable patterns. According to the Central Bank of Sudan (CBOS) annual report, about sixteen thousand one hundred sixty two (16.162) Point of Sale devices are in use and more than three million (3.962.127) electronic Banking cards are distributed across the country. Of these, the population includes Business owners identified as shops, supermarkets, pharmacies, computer and telephone peripherals and other institutions using point of sale devices.

Sampling refers to any technique that draws conclusions based on measurements of a portion of the population. i.e., Zikmund et al. (2010) define a sample in their study as a subset from a larger population. For the recent study respondents selected are taken from the merchants and different business owners in Khartoum State, who use Point Of Sale (POS) terminal. About 150 questionnaires in total were distributed to participants and 141 questionnaires were returned, with an overall response rate of 94%. This sample size fulfills the condition of social science research as indicated by Pinsonneault and Kraemer (1993). Another study by Struwig and Stead (2001) indicates that "If a

sample process has been correctly followed then the sample size of 150-200 can be considered acceptable and reflect the whole population.”

3.2 Data Collection Instruments

An exploratory study that seeks to investigate POS challenges from the banks’ employees and the merchants’ perspectives.

Triangulation refers to the use of multiple methods or data sources in qualitative research to develop a comprehensive understanding of phenomena (Patton, 1999). Triangulation approach was used in this study to increase the credibility and validity of research findings.

Two data collection methods were used to investigate the challenges that impede the use of POS in Sudan. A questionnaire was used to collect the data from merchants, and focus group was employed to explore the views of the banks’ employees.

3.2.1 The Questionnaire

As mentioned in the study of Cohen (1989) quoted in Sillignakis (2002) a questionnaire is defined as a self-report instrument used for gathering information about variables of interest to an investigation.

For the current study Likert-scale statements are designed and distributed to respondents. One of the main advantages of the questionnaire is to help the researcher easily analyze the data since the responses can be directly matched and easily aggregated (Patton, 1990 cited in Sillignakis, 2002).

The questionnaire consists of three parts; the first part is designed to gather data from merchants on the operational challenges that face them when they use POS terminals. Such as commission of the POS transaction, the reliability of the network and electricity and so on.

The second part is designed to assess the merchant point of view with regard to the legal and organizational challenges related to POS. In this section some questions asked cover: clear policy to support POS, overall strategy to promote POS service to public and other related issues.

The last part is designed to assess the extent to which financial aspects affect the use of POS terminal.

3.2.2 Validity and Reliability of the Questionnaire

Table 2. Illustrates Cronbach’s Alpha Values on Questionnaire Themes

NO.	Variables	Cronbach’s Alpha	N of items
1	Operational Challenges	0.663	10
2	Legal and Regulation Challenges	0.809	8
3	Financial Aspects affect the use of POS	0.691	9
	Overall	0.726	27

Reliability level can be measured by Cronbach’s alpha test, according to Zikmund et al. (2010) and George and Mallery (2003) who concluded that if the measurement scale in Cronbach’s alpha is more than 0.70 then it is accepted. And if the result ($\alpha < 0.60$) there is a poor reliability, as shown in Table 2

if the result ($0.60 \leq \alpha, < 0.70$) there is a fair reliability and if the result ($0.70 \leq \alpha, < 0.80$) it means that a test has good reliability and also if ($\alpha \geq 0.80$) it means there is an excellent reliability. The tests revealed that a Cronbach's alpha for overall is (0.726) of (141) respondents to (27) numbers of items and it means that the reliability test for this study is a 0.726, and the result for operational challenges is (0.663) from (10) number of items. The result for the legal and regulation challenges is (0.0.809) from (8) number of items. Also the result for a financial Aspects affect the use of POS is (0.691)

3.2.3 Questionnaire Procedure

The questionnaire was administered to with merchants to know their opinions about the current situation regarding the use of POS by merchants, the use of POS in business, obstacles facing merchants, their opinions on using POS to promote their products and services. Research assistants were employed to distribute the questionnaires, make certain that questionnaires are filled in properly and return the completed questionnaires to the researchers for the data analysis. To explore the data and get detailed information about participants a descriptive statistical procedure including percentage and frequency distribution was employed. Then, a mean, standard deviation, coefficient of variance were used to examine differences with categorical variables.

Currently, focus groups method audio files were transcribed in full and the transcripts were analyzed with the objective of understanding the main challenges hindering the use of POS in Sudan from the banks' employees perspective. A conventional content analysis approach was used to analyze the data and codes were revealed from the data (Hsieh & Shannon 2005). Thematic analysis was conducted applying the constant comparison method (Glaser & Strauss, 1967).

Initially, the first and the third authors each coded the transcripts independently of one another. The discussion guide was used to develop provisional themes; then derived codes were generated as the analysis continued. Discussion of the researchers' provisional coding schemes continued until agreement was reached on the primary codes. A more detailed hierarchical coding scheme was developed on the basis of this initial analysis. During the coding, detailed code descriptors were developed and revised following further discussion. While we did not conduct frequency counts of responses, each of the coders included descriptors of the consistency of responses using words such as 'many' and 'majority' to convey themes or responses that were prevalent across groups and consistent among participants within groups. Responses that were inconsistent with emerging patterns were sought and are reported where they occurred. Recording and continually reflecting on this development ensured transparency in the process.

The actual results and the interpretations are discussed in the next section.

3.3 Focus Group

A focus group method was used in this study to explore the research objectives focusing on the banks' employees views. The method is one of the qualitative data collection approaches and it is used to gain an in-depth understanding of an specific topic (Gibbs, 1997). Calder (1977) suggested that focus group discussion is a suitable method for exploratory studies. Focus group discussions promote active

interaction among the participants. Such spontaneous dialogues enable researchers to explore participants' experiences, beliefs and opinions (Then, Rankin, & Ali, 2014). A focus group discussion is usually employed to obtain data from a purposely selected group of individuals rather than from a statistically representative sample of a broader population. It is argued that focus group in addition to its ability to providing insightful information about specific topic it is also perceived to be a “cost effective” and “promising alternative” in participatory research (Morgan, 1996), (Widdows et al., 1991). At the same time it provides different perspectives or views about the object of the study (Guba & Lincoln, 1994; Orr, 1992). This method is widely used in different fields of knowledge and many scholars have employed it (Edmunds, 1991; Krueger & Casey, 2000). Jarvenpaa and Lang (2005) have also employed focus groups technique to explore innovative mobile services.

It is argued that the data extracted from focus groups discussions can be more valid and useful when participants feel comfortable about sharing their opinions and communicating their ideas with those who have similar knowledge and backgrounds to theirs (Bryman, 2001), (Stewart & Shamdasani, 1990). To this effect, ten focus groups were organised for 100 bank' employees to explore their views and opinions about the challenges related to the use of POS in Sudan. The sessions were held separately for employees from the IT departments and marketing departments from the different banks.

The session was planned to last 30 minutes, each session started with an overview of the aims of the study and explained how the participants could discuss and act within the session. It was important to make sure that all participants' ideas and opinions were well represented in focus group discussion. The researchers worked as facilitators to motivate and encourage the participants to contribute their ideas and opinions in the discussion. At the beginning of the discussion, the facilitator leads the discussion by introducing or addressing some issues regarding the use of POS in Sudan. The discussion was semi-structured and most of the questions were open to trigger active discussion. All sessions were recorded and as the collected data was later analyzed and categorized into factors that influence the use of the POS in Sudan.

4. Data Analysis and Discussion

4.1 Questionnaire Findings

Table 3. Period of Using POS

Period of using POS in year	Frequency	Percent
Less than year	56	39.7
1-3 years	77	54.6
6-10 years	5	3.5
More than 10	3	2.1
Total	141	100.0

The results in Table 3, indicate that more than half of the respondents have used the POS between 1-3 years (54.6%). Followed by those who use the device for less than one year (39.7%). While only 2.1% have used POS for more than 10 years.

Table 4. Operational Challenges Facing the Use of POS by Merchants

Statement	measurement	Strongly Disagree	Disagree	I Don't Know	Agree	Strongly Agree	Mean	Std. Deviation	Chi-Square	Sig.
Network reliability affects regular use of POS	Percent	5.0%	9.9%	2.8%	40.4%	41.8%	4.04	1.139	106.908a	.000
Irregular supply of Electricity interruption reduce the revenues from POS	Percent	10.6%	32.6%	4.3%	29.1%	23.4%	3.22	1.394	41.518a	.000
Point-of-sale procedures are complex and affect my desire to acquire the point of sale.	Percent	12.8%	56.0%	11.3%	8.5%	7.1%	2.39	1.065	126.667b	.000
Failure to maintain the point of sale periodically by the bank or the company in charge affects the continuity of the provision of point-of-sale service	Percent	5.7%	24.1%	14.2%	32.6%	22.0%	3.42	1.239	29.957c	.000
The transaction commission is unrewarding or dis-motivating for me.	Percent	6.4%	41.8%	17.0%	20.6%	8.5%	2.82	1.127	59.594d	.000
The lack of clarity of interactive messages to confirm the status of the transaction affects my use of POS	Percent	5.0%	36.9%	11.3%	27.7%	18.4%	3.18	1.254	45.929e	.000
Failure to settle disputes quickly prevents me from using pos	Percent	5.7%	27.7%	20.6%	20.6%	21.3%	3.25	1.256	19.333b	.000
Failure to settle in the immediate amount of transactions collected through pos affects my use of pos	Percent	5.7%	27.7%	20.6%	20.6%	21.3%	3.32	1.353	25.500e	.001
My lack of knowledge and skill about pos and usage problems hinders me from using pos.	Percent	21.3%	55.3%	3.5%	9.2%	9.2%	2.29	1.181	125.281c	.000

From my point of view, I think										.000
pos transactions are not safe for	35.5%	46.1%	4.3%	6.4%	6.4%	2.01	1.120	110.029c		
me and the customer alike	Percent									
Total Average Mean & Standard Deviation and Coefficient of Variance						2.994	1.2128	78.333a		.000

Based on the results shown in Table 4, (82.2%) of the respondents report that the most challenging factor is the poor network reliability. Additionally (54.6%) of the respondents believe that the failure to maintain POS periodically by the bank or the company in charge affects the continuity of the provision of point-of-sale service.

Followed by the effect of irregular supply of electricity interruptions (52.5%).

The table also shows (chi-square), It shows that there is a significant relationship between the use of POS channels and operational challenges ($P < 0.05$, Sig.=.000).

Similar studies found that technological challenges have more effect on using e-payment methods, mainly security is seen as an obstacle that hinders usage (Ghazi & Khalid, 2012, p. 9); Khalfan et al. (2006).

Table 5. Regulatory and Legal Challenges of POS Use

Statement	measurement	Strongly Disagree	Disagree	I Don't Know	Agree	Strongly Agree	Mean	Std. Deviation	Chi-Square	Sig.
For current operators, a clear										.000
policy of pos support facilitates		4.3%	3.5%	20.6%	46.1%	25.5%	3.85	.985	86.766a	
my use of POS.	Percent									
Regulated controls for										.000
point-of-sale payments are not		4.3%	2.1%	9.2%	51.1%	33.3%	4.07	.946	128.752a	
clear in terms of preserving										
merchant rights	Percent									
Current operators have a clear										.000
strategy to educate the public		5.0%	14.9%	21.3%	28.4%	30.5%	3.65	1.202	30.596a	
about point-of-sale services										
from your point of view	Percent									
The participatory model of										.000
point-of-sale management does										
not preserve the rights of the		2.1%	1.4%	22.0%	40.4%	31.2%	4.00	.899	87.781b	
merchant and there is no clear										
boarders between the roles of										
stakeholders.	Percent									

Dispute settlement is legal in terms of procedures for POS transactions	Percent	2.8%	2.85%	35.5%	34.8%	23.4%	3.74	.949	75.071c	.000
The competent authorities raise awareness about the laws and controls involved in the use of points of sale.	Percent	2.8%	2.8%	35.5%	34.8%	23.4%	3.33	1.076	46.203d	.000
The competent authorities regularly amend the controls and laws in accordance with your interest as a trader.	Percent	7.8%	12.1%	38.3%	24.8%	17.0%	3.31	1.128	40.809a	.000
There is a clear and easy point-of-sale use guide prepared by the competent authorities.	Percent	9.9%	9.2%	24.1%	31.2%	25.5%	3.53	1.245	27.546a	.000
Total Average Mean & Standard Deviation							3.685	1.05375	94.475a	.000

According to the above Table 5, most of the respondents (84.4%) think that regulated controls for point-of-sale payments are not clear in terms of preserving merchant rights, followed by the perception of merchants on the vague policies that manage the use of POS (71.6%), equally respondents deem that the participatory model of point-of-sale management does not preserve their rights as merchants and there is no clear definition for the role of the stakeholders.

The table also provides (chi-square). It shows that there is a significant relationship between the use of POS channels and regulatory and legal challenges ($P < 0.05$, $\text{Sig.} = .000$).

The above result is similar to the result of Tan and Ouyang (2004), who claim that the lack of legislation is an initial challenge that influences e-banking adoption in china. Unlike the findings of (Seifu, 2017), who argues that the regulation and legal factors are not among the most challenging factors that hinder the implementation of e-payment in Ethiopian banking industry.

Table 6. The impact of Financial Incentives

Statement	measurement	Strongly Disagree	Disagree	I Don't Know	Agree	Strongly Agree	Mean	Std. Deviation	Chi-Square	Sig.
The cost of owning POS devices is too high for me as a trader.	Percent	22.7%	46.8%	16.3%	8.5%	5.7%	2.28	1.083	75.915a	.000

Obtaining									.000
POINT-of-sale devices	9.9%	45.4%	14.2%	16.3%	12.8%	2.76	1.225	60.460b	
through companies or									
banks is not motivated.	Percent								
The commission									.000
account system is									
unfair and not	12.1%	42.6%	20.6%	14.9%	8.5%	2.65	1.141	52.187b	
encouraged to use pos									
for me as a trader.	Percent								
From my point of									.000
view, the use of pos									
hinders the speed with	29.1%	46.8%	7.8%	8.5%	6.4%	2.15	1.135	90.604b	
which customers get									
the service.	Percent								
The value of financial									.000
transactions in the									
store is very simple	19.9%	57.4%	7.8%	9.2%	5.7%	2.23	1.053	132.014a	
and does not require									
the use of pos.	Percent								
The repeated need to									.000
use money in my shop	14.2%	50.4%	12.1%	15.6%	7.1%	2.51	1.135	85.500c	
is one of the reasons									
why i don't use pos.	Percent								
The majority of my									.000
clients don't have	10.6%	30.5%	10.6%	31.2%	16.3%	3.12	1.306	30.143c	
plastic cards that are									
used at point of sale.	Percent								
merchant and brokers									.000
insist on obtaining the	10.6%	32.6%	12.8%	24.8%	19.1%	3.09	1.330	22.794a	
value of the goods in									
my business in cash.	Percent								
There are no									.104
non-financial (moral)									
incentives that	11.3%	19.9%	20.6%	24.1%	24.1%	3.30	1.335	7.688a	
stimulate and give a									
push to use POS	Percent								

Total Mean &Standard		112.832b
Deviation	2.676667	1.193667

The above Table 6 shows that (48.2%) of the respondents believe that banks or companies that provide them with POS do not provide any other (non-financial) incentives that may motivate them to use the device. Interestingly (47.5%) of the respondents think that the majority of their clients don't possess plastic cards that are using the point of sale. Merchants appear to prefer cash over money in their bank accounts as it is much needed for their daily transactions and buying of goods (43.9%).

The (chi-square) shows that there is a significant relationship between the use of POS channels and financial incentives challenges ($P < 0.05$, Sig.=.000).

Interestingly the regulations and legal challenges scored the highest mean (3.68), followed by operational challenges (2.99), while the financial incentive achieved the lowest mean (2.67)

The above result is similar to the findings of Singh. And Grover. (2011), who identified as a disabling factor is the personal memorizing. These factors help customers to maintain their privacy. Banks should educate their customers to remember their passwords. This result supports the findings of Sayar and Wolfe (2007).

4.2 Focus Group Findings

Anderson (1990) observes that there are two major types of reporting focus group data: first, conducting analysis and reporting summary of the main ideas; second, giving the subject's words verbatim. The researcher can choose between the two approaches In this study the researchers will provide narrative summaries that present participants' opinions and views rather than actual quotes. The main findings from data generated by the focus group discussions revealed that Five general themes emerged in all focus group discussions:

Ambiguity of the operability model of the POS

All participants from IT and marketing departments recognize that delivering services through POS require the involvement of different parties such as banks, private sector companies, EBS and CBOS. The majority of participants especially from the marketing department see that the operating model facilitates interoperability but the discussion reveals that the model does not clearly identify the role of each party involved in delivery of e-payments through POS and how the role of each party interacts with other key players in the model.

Management and resolution of disputes

Almost all participants observed the delayed responses in managing and resolving transactional disputes. Participants deem that despite efforts to deliver e-payment services smoothly some faulty transactions occur. Because funds are transferred in real-time or near-real-time, challenges may arise when cancelling, reversing or recalling any fraudulent or inaccurate transactions. An effective resolution mechanism is required to manage, operate and maintain disputes related to POS transactions.

Development of incentive plans for POS

At the moment customers bear some cost when conducting purchasing transactions. Although it is trivial but yet it puts customers off from using the POS. Similarly merchants feel reluctant to use POS to receive payments as it is difficult to retrieve it back in cash especially with the shortage of bank notes. Participants feel that there is a need to develop structured incentive plans to motivate and encourage merchants and customers to use POS.

Delays in payment to merchants

Banks delay crediting the merchant with payments received from customers. Banks are not activating the instant payment service that enable the merchant to receive payment made from sales on the same day, instead it is paid into his account after one day. Such action discourage merchants from using point of sales as e-channel to deliver e-payment services.

Lack of the know how about the POS by bankers

Bankers at the front lines and at the customer services lack motivation to promote and provide technical support to customers as some of them lack the knowledge and skills required to promote POS services.

Lack of continuous maintenance for POS machine

Bankers do not regularly follow and monitor the performance of POS system and sometimes these devices are neglected or not used by merchants as an e-payment channel.

The service provided by POS channel does not always reflect user's needs

All participants from the marketing department think that most of e-payment services are not a good identification of customer's needs as they come either from the IT department or the management, and this is reflected in launching a limited number of services that does not necessarily meet user's needs.

Making use of other available POS

All participants suggested that more POS need to be distributed to different merchants. Participants suggested that the Taxation Bureau in Sudan have a number of POS machines for collecting the value added tax but they do not use they for another purpose.

5. Conclusion

The study aims to investigate the challenges facing the use of POS terminals from the banks' employees and merchants' perspectives. The results show that the use of POS is growing especially during the period from 2018 to present. Based on the merchants' views, the use of POS terminal face operational challenges and the biggest challenge facing the use of POS is the network reliability which affects regular use of POS. Second, the results also confirm that the use of POS channel faces regulatory and legal challenges, especially in relation to the uncertainty related to the regulated controls preserving merchant rights which is considered as a challenge facing the use of POS by merchants.

On the other hand, focus group results reveal that all participants from IT and marketing departments recognize that delivering services through POS require the involvement of different parties such as banks, private sector companies, EBS and CBOS. Also the results show that banks' employees do not

regularly follow and monitor the performance of POS system and sometimes these devices are abandoned or not used by merchants as an e-payment channel. Further results show that bank employees at the front lines and at the customer services desks feel unmotivated to promote and provide technical support to customers as some of them lack the knowledge and skills required to promote POS services.

Reference

- Adam, M. (2013). Electronic Banking Problems and Opportunities: The Sudanese Context. *European Journal of Business and Management*, 5(22).
- Adekola, A., Korsakiene, R., & Tvaronaviciene, M. (2008). Approach to innovative activities by Lithuanian companies in the current conditions of development. *Technological and Economic Development of Economy*, 14(4), 595-611. <https://doi.org/10.3846/1392-8619.2008.14.595-611>
- Adeoti, O. O. (2013). Challenges to the efficient use of point of sale (POS) terminals in Nigeria. *African Journal of Business Management*, 7(28), 2801-2806.
- Alhassan, S. M. (2018). *The Future of Banking Technology: Khartoum*. Sudan: Sudan Academy for Banking and Financial Sciences.
- Amanuel. (2018). *Assessing Practice And Challenges Of Electronic Banking Project Execution; Case Study Of Point Of Sale (POS) Deployment Process By Commercial Bank Of Ethiopia (CBE)* (Degree Of Masters, published thesis). Addis Ababa, Ethiopia.
- Anderson, G. (1990). *Fundamentals of educational research*. London: The Falmer Press.
- Bassey, C. (2008). *Digital money in a digitally divided World: Nature, challenges and prospects of e payment systems in Africa*. Retrieved July 18, 2012, from <http://scott.mainzone.com/bassey-digitally-divided-world.pdf>
- Beza. (2014). *Assessment of the Opportunities and Challenges for the Adoption of E-Banking Service in Ethiopia: A study with reference to selected commercial Banks* (Masters of Science Degree published thesis). Mekelle, Ethiopia
- Bryman, A. (2001). *Social Research Methods*. New York: Oxford University Press.
- Calder, B. J. (1977). Focus groups and the nature of qualitative marketing research. *Journal of Marketing Research*, 14, 353-364. <https://doi.org/10.1177/002224377701400311>
- Central Bank of Sudan Annual report. (2019). Retrieved from <https://cbos.gov.sd/en/publication-type/annual-reports>
- Disruptions in Retail through Digital Transformation Reimagining the Store of the Future*. (2021). Retrieved from <https://www2.deloitte.com>
- Edmunds, H. (1999). *The focus group. Research handbook*. Chicago, IL: American Marketing Association and NTC Business Books. <https://doi.org/10.1108/bl.1999.12.3.46.1>
- Ferreira, F. (2003). *Inovação Tecnológica no Sistema Financeiro Português: Evolução e Perspectivas*. P é-de-P ágina Editores, Coimbra, Portugal.

- Gardachew, W. (2010). E-banking in Ethiopia: Practices, opportunities and challenges of ebanking. *Journal of Internet Banking and Commerce*, 15(2), 2-9.
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 update* (4th ed.). Boston: Allyn & Bacon.
- Ghazi, A. Al-Weshah, & Khalid, Al-Zubi. (2012). E-Business Enablers And Barriers: Empirical Study Of Smes In Jordanian Communication Sector. *Global Journal of Business Research, The Institute for Business and Finance Research*, 6(3), 1-15.
- Gibbs, A. (1997). Focus groups. *Social Research Update*, 99, Winter 1997.
- Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine. <https://doi.org/10.1097/00006199-196807000-00014>
- Gomzin, S. (2014). *Hacking Point of Sale: Payment Application Secrets, Threats, and Solutions*. Retrieved from <https://www.safaribooksonline.com>
- Guba, E. G., & Lincoln, Y. S. (1994). *Competing paradigms in qualitative re-search*. Thousand Oaks, CA: Sage Publications Inc.
- Horus development finance. (2011). *study for the establishment of Pro-poor branchless banking in Sudan*. Retrieved from <http://www.mfu.gov.sd/sites/default/files/Pro%20Poor%20BB%20Sudan%20Final.pdf>
- Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288. <https://doi.org/10.1177/1049732305276687>
- Ismail, M. A. (2012). Factors Influencing the Adoption of E-banking in Sudan: Perceptions of Retail Banking Clients. *Journal of Internet Banking and Commerce*, 17(3).
- James, E. D. (2003). *The Effects of POS Implementation and Retail, Technology on Sales and Profitability for Small to Mid- Sized Retailers Dionco Inc. (2003)*. Retrieved from http://www.dionco.com/public/articles/POS_Study_White_Paper.pdf
- Järvenpää S., & Lang, K. (2005). Managing The Paradoxes of Mobile Technology. *Information Systems Management*, 7-23. <https://doi.org/10.1201/1078.10580530/45520.22.4.20050901/90026.2>
- Kelvin, O. (2012). Mobile money for financial inclusion. *Journal of Macro Finance, Africa, Nett, Lagos*, 4: 14. National Bureau of Statistics, 2012. *Annual Statistical Reports*, 13(11).
- Khalfan, A. et al. (2006). Factors influencing the adoption of internet banking in Oman: A descriptive case study analysis. *International journal of financial services management*, 1(2/3), 155-172. <https://doi.org/10.1504/IJFSM.2006.009623>
- Khatab, I., Abdallah, A., & Al-Magli, O. (2020). The Implications of E-banking Channels on Job Security and Personal Development. *Journal of Banking and Financial Studies*, (35), 9-39.
- Kim, C., Mirusmonov, M., & Lee, I. (2010). An Empirical Examination of Factors Influencing the Intention to Use Mobile Payment. *Computers in Human Behaviour*, 26, 310-322. <https://doi.org/10.1016/j.chb.2009.10.013>

- Krueger, R. A., & Casey, M. A. (2000). *Focus groups: A practical guide for applied research* (4th ed.). Thousand Oaks, CA: Sage Publications Inc
- Kumaga, D. (2010). *The challenges of implementing electronic payment systems?—The case of Ghana's E-zwich payment system*. Retrieved July 19, 2012 from <http://www.bth.se/fou/cuppsats.nsf/all/d54b3261471c1075c1257838006856c6?OpenDocumentpractices>
- Melnikas, B. (2010). Sustainable development and creation of the knowledge economy: The new theoretical approach. *Technological and Economic Development of Economy*, 16(3), 516-540. <https://doi.org/10.3846/tede.2010.32>
- Monisha, et al. (2017). Electronic Banking in India: Innovations, Challenges and Opportunities. *International Journal of Engineering Research & Technology (IJERT)*.
- Morgan, D. L., Krueger, R. A., & King, J. A. (1998). *The focus group kit* (Vol. 1-6). Thousand Oaks, CA: Sage Publications Inc.
- Mugenda, M. O., & Mugenda, G. A. (2003). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: African Centre for Technology Studies.
- Olakah. (2012). Benefit, challenges and prospects of a cashless economy. *Journal of the Chartered Institute of Bankers of Nigeria*.
- Omerabi, O. (2013). *Challenges of E-Commerce in Sudan: Khartoum*. Sudan: Sudan Academy for Banking and Financial Sciences.
- Omerabi, O. (2018). *The Future of Banking Technology: Khartoum*. Sudan: Sudan Academy for Banking and Financial Sciences.
- Orr, D. (1992). *Ecological literacy: Education and the transition to a postmodern world*. Albany, NY: State University of New York Press.
- Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *HSR: Health Services Research*, 34(5), 1189-1208.
- Peppers, K., & Ma, W. (2003). An Agenda for Research about the Value of Payment Systems for Transactions in Electronic Commerce. *The Journal of Information Technology Theory and Application (JITTA)*, 4(4), 1-16.
- Pinsonneault, A., & Kraemer, K. L. (1993). Survey research methodology in management information systems: An assessment. *Journal of Management Information Systems*, 10, 75-105. <https://doi.org/10.1080/07421222.1993.11518001>
- Pinto, S., & Ferreira, F. (2010). Technological dissemination in the Portuguese payments system: An empirical analysis to the region of Santarém. *International Journal of Human Capital and Information Technology Professionals*, 1(4), 55-75. <https://doi.org/10.4018/jhcitp.2010100104>
- Sawng, Y., Kim, S., Lee, J., & Oh, Y. (2011). Mobile service usage behavior in Korea: An empirical study on consumer acceptance of innovative technologies. *Technological and Economic Development of Economy*, 17(1), 151-173. <https://doi.org/10.3846/13928619.2011.557859>

- Seifu.m, (2017), Assessment on Challenges of E-Payment Service. *Practice in Commercial bank of Ethiopia* (Published thesis). Addis Ababa, Ethiopia.
- Sherferahu, T. S., & Gezu, G. (2016). Challenges and Opportunities of E-payment in Ethiopia Banking Industry : With the reference of private commercial banks. *International Journal of Scientific and Research Publications*, 6(8), 502-509.
- Shittu, O. L. O. R. U. N. S. E. G. U. N., & FULFILMENT, I. P. (2010). *The Impact Of Electronic Banking In Nigeria Banking System* (Critical Appraisal Of Unity Bank (PLC). LadokeAkintola University of Technology, Ogbomoso.
- Sillignakis, K. (2002). *Rural Tourism Development for the Prefecture of Lassithi in Crete*. Mimeo.
- Singh. H., & Grover, S. (2011). Marketing of E-banking Services: A Critical Analysis on Lifecycle Demographics. *Enabling and Disabling Factors International Journal of Multidisciplinary Research*, 1(7).
- Stewart, D. W., & Shamdasani, P. N. (1990). *Focus Groups Theory and Practice*. Sage, London.
- Struwig, F. W., & STEAD, G. B. (2001). *Planning, designing and reporting research*. Cape Town: Pearson.
- Sujith, T. S., & Julie, C. D. (2017). Opportunities and Challenges of E-Payment System in India. *International Journal of Scientific Research and Management (IJSRM)*.
- Tadesse, W., & Kidan, T. (2005). *E-payment: Challenges and opportunities in Ethiopia*.
- Tan, Z., & Wu, O. (2004). Diffusion and Impacts of the Internet and E-commerce in China. *Globalisation and Electronic Commerce*, 14(1), 25-35. <https://doi.org/10.1080/1019678042000175270>
- Then, K. L., Rankin, J. A., & Ali, E. (2014). Focus group research: What is it and how can it be used? *Canadian Journal of Cardiovascular Nursing*, 24(1), 16-22. Retrieved from <https://www.researchgate.net/>
- Widdows, R., Hensler, T. A., & Wyncott, M. H. (1991). The Focus Group Interview: A Method for Assessing User's Evaluation of Library Service. *College and Research Libraries*, 52(July), 352-359. https://doi.org/10.5860/crl_52_04_352
- Wondwossen, T., & Tsegai, G. (2005). *E-payment: Challenges and opportunities in Ethiopia*. Addis Ababa Ethiopia: Economic Commission for Africa.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business research methods* (8th ed.). Mason, HO: Cengage Learning.
- Zulu, M. (2006). KZN University takes first multilingualism step. *City Press*, 6. <https://www.checpos.com/blog/how-cloud-pos-software-in-oman-is-essential-for-your-retail-management-business/visited>