

UNIVERSITY OF CAPE COAST

ELECTRONIC PAYMENT SYSTEMS; USER ACCESSIBILITY AND
CHALLENGES: A CASE STUDY OF NZEMA EAST MUNICIPALITY

BY

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DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature: Date:

Name: Charles Kyei-Boakye Marfo

Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Cape Coast.

Supervisor's Signature: Date:

Name: Mr. Isaac Kwadwo Anim

ABSTRACT

Electronic commerce is now thought to hold the promise of a new commercial revolution by offering an inexpensive and direct way to exchange information and sell or buy products or services. The purpose of this study was to access electronic payment systems; user accessibility and problems using Nzema East Municipality as a case study. A sample size of 380 respondents was selected from individuals and business owners in the municipality. Convenience sampling technique was adopted by the study to ensure ease in questionnaire distribution and completion. Based on the findings of the study, it can be concluded that mobile money is the most popular and most patronised electronic payment system in Nzema East municipality. Again, the study concludes that electronic payment systems in the Nzema East Municipality are not user friendly. It also concludes that availability of payment systems and convenience are the most influential factors that determine people's accessibility of EPS in the municipality. Also, it can be concluded from the study that lack of knowledge and skills in basic computing and inadequate point of sale terminals are the biggest challenges that affect user accessibility of electronic payment in the municipality. Moreover, provision of point of sale devices, simplification of electronic payment process, improving security and reduction of cost on transactions can improve user accessibility of electronic payment systems. Finally, the study recommends that mobile money should lead the revolutionisation of electronic payment systems amidst enforcement of regulations by regulatory bodies to ensure maximum accessibility and patronage and the introduction of Interactive Voice Recognition Technology.

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DEDICATION

I dedicate this study to my son, Ryan Kyei Boakye-Marfo and family.

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LIST OF ABBREVIATIONS

ACH	Automated Clearing House
ATM	Automated Teller Machine
AVR	Automated Voice Response
BoG	Bank of Ghana
CCC	Cheque Code-line Clearing
EPS	Electronic Payment Systems
GACH	Automated Clearing House
GEF	Ghana Economic Forum
GhIPSS	Ghana Interbank Payment and Settlement Systems Limited
GSM	Global System for Mobile communications
ICT	Information and Communication Technology
ISO	International Standards Organization
MTN	Mobile Telecommunication Company
PDA	Personal Digital Assistant
POS	Point of Sale
RTGS	Real Time Gross Settlement
SPSS	Statistical Package for the Social Sciences
USD	United States Dollars

CHAPTER ONE

INTRODUCTION

Background to the Study

In the early 1990s, the business and consumer community found a new way of doing business, called e-commerce. Since then, e-commerce has become a popular and recognized way of doing business. With the rapid development of electronic commerce, electronic payment systems have gradually evolved to generate online and offline business transactions for payment settlement. According to the study of global market size, developing countries have a higher percentage of paper-based payment transactions. For business-to-business transactions, estimates indicate that only 31% of the total volume of payments made by retailers in sub-Saharan Africa is made electronically (Africa Development Bank, 2012).

In sub-Saharan Africa, the evolution of information and communication technologies (ICTs) is radically changing the way business is conducted. It is now believed that e-commerce promises a new business revolution by providing an inexpensive and direct way to exchange information and sell or buy products or services. Ghana's payment system has seen significant improvements in the last decade, particularly in terms of payment infrastructure. The country's payments landscape has been positively influenced by improvements in national economic infrastructure such as the availability of Global System for Mobile Communications (GSM) technology, increased Internet penetration, and the increasing deployment of Automated Teller Machines (ATMs) over the past

decade (KPMG, 2016). In 2002, Ghana's Interbank Settlement System was launched, a real-time gross settlement system designed to link the banks' headquarters to the Central Bank (Bank of Ghana) to enable real-time electronic payments between the banks. Bank of Ghana (BoG) has established Ghana Interbank Payment and Settlement Systems (GhIPSS) to help the country migrate to a cashless economy. GhIPSS, which is ISO 27001 certified, has implemented and operates National Switch systems and the biometric chip card payment system, e-zwich and CCC systems (code control line) and Automated Clearing House (GACH) systems.

Mobile network operators active in the mobile money sector in Ghana include MTN Money, Vodafone Cash, Airtel Money and TiGO Cash. MTN is currently the leading provider of converged communications solutions in Ghana with a market share of around 48% (KPMG, 2016). More than 12 million Ghanaians use MTN for mobile phone services, broadband Internet and mobile money transfer services. Financial technology companies have also contributed to the development of the payments sector in Ghana. From simple payment gateways to their mobile wallets, these companies have a huge impact on the payments industry in Ghana. Current leaders in financial technology in Ghana include MPower, Slydepay, ExpressPay and Zeepay.

The above activities undertaken by stakeholders in the Ghanaian economy was aimed at ensuring that electronic payment systems are easily accessible to ensure maximum user adoption and patronage. After several years of implementing policies and strategies to improve the accessibility and accessibility

of electronic payment systems in Ghana, it is important that these studies be conducted to assess the effectiveness of these policies and strategies. This study aims to assess user accessibility and the challenges of electronic payment system in Ghana's economy using Nzema East Municipality as case study.

Statement of the Problem

Ghana has not yet realized the full benefits of the technological advances in electronic payment such as the use of cards, automated teller machines (ATM), the internet, mobile phones, etc. Payment for goods and services in Ghana is largely characterized by long queues; long distance travelling and time wasting that generally affect business activities and ultimately economic development. Payment for goods and services, settling utility bills, and money transfers has been a major headache for individual and firms in Ghana resulting in declined business activities and huge debt to most of the utility providers (Sarpong, 2003). The payments and clearing system in the country is under developed. The banking halls continue to be immersed with long queues as people come in to collect their monthly wages or salaries. Many people have been holding large sums of money outside the banking system as a result of the ordeal one has to go through before withdrawing money or making payment. However, faced with such problems in the payment process, only a few payment solutions have been introduced so far in Ghana to solve them. Cash still remains the most popular retail payment instrument, despite the increase in the introduction of electronic payment schemes in the country.

According to KPMG (2017) report on payment in Africa, improving infrastructure and distribution channels is the key to adopting e-money and payments in Ghana. The report indicates that, although ATMs are quite common, especially in large cities, it is rare to find a point-of-sale (POS) terminal at a merchant. Even when deployed, they are often out of service due to telecommunication. As a result, most debit card customers tend to limit their use to cash withdrawals. Clearly, the deployment of payment terminals will have to be accelerated. However, it should be noted that these statistics are of limited value. For example, there are no tabulations of the total number of POS devices in Ghana and for that matter Nzema East Municipality and no readily-available data on their use. To effectively and efficiently use electronic payment systems for commerce in Ghana, it is important to identify Electronic Payment System (EPS) devices available, their condition, user friendliness to the public and any other challenge that may exist that affect accessibility and usage of EPS in the Nzema East Municipal. According to the 2010 population census of Ghana, only 32.1% of the people of Nzema are literate in English (Ghana Statistical Service, 2010). This means that majority of the people in the municipality can either not read nor write the English language. Therefore, this study seeks to assess user accessibility and challenges of electronic payment systems in the Nzema East municipality.

Research Objectives

The objective of the study is to assess user accessible and challenges of electronic payment systems in the Nzema East Municipality. The specific objectives of the study are to:

1. Identify the forms of electronic payment systems available in Nzema East Municipality.
2. Investigate the availability and user friendliness of electronic payment systems in Nzema East Municipality.
3. Investigate the extent of patronage of electronic payment systems available in Nzema East Municipality.
4. Assess challenges that hinder user accessibility of electronic payment system in Nzema East Municipality.

Research Questions

The study seeks to find answers to the following questions:

1. What forms of electronic payment systems are used in Nzema East Municipality?
2. How available and user friendly are electronic payment systems at Nzema East Municipality?
3. What is the extent of patronage of electronic payment systems available in Nzema East Municipality?
4. What challenges hinder user accessibility of electronic payment systems in Nzema East Municipality?

Significance of the Study

The study is significant to stakeholders like businesses, banks and individual in the country with special reference to those in Nzema East municipality. This study will give them empirical data in relation to strategies that

can be put forward to make electronic payment systems more accessible to users and how other challenges related to electronic payment systems can be addressed.

The results of the study can be a source of literature or secondary data for those in the academic field. These include researchers that would want to conduct studies into electronic payment systems user accessibility and problems. The study will be very beneficial to policy makers including the banks as the findings of this study could assist them to improve their electronic payment products and services. The Bank of Ghana through the GhIPSS could use the results of this study to resolve challenges that hinder the user accessibility and patronage of EPS devices in the country and for that matter Nzema East Municipality.

Delimitation of the Study

The scope of the study is limited to user accessibility and other challenges related to electronic payment systems in the Nzema East Municipality. The study looks at the various electronic payment systems available to the people of Nzema East as well as the challenges they face in using the technology. The study is also limited to users and non-users of EPS such as businesses and individuals whiles developers and regulators of EPS will not be included in this study. The study will capture the views of businesses and their customers as well as the general public that transact business with electronic payment systems and those that do not.

Again, the study is limited to Nzema East Municipality and as such its findings may not reflect the situation at other areas in the country. The recommendations may as well not be entirely applicable to other municipalities or districts in Ghana.

Limitations of the Study

The study is being undertaken in only Nzema East Municipality within a specified period of time. Thus, this could put a limitation on the capacity of the investigator to take a broader view of the findings for other areas of the country in general. Data collection for the study was cross sectional as a result of time and financial limitations. Perhaps if the study was longitudinal, the outcomes could be different.

Lastly, the research largely relied on qualitative approach even though some quantitative methods were used as well. Thus, the study will be affected by the limitations of that kind of approach. Maybe if the study had adopted more of quantitative approach it could have obtained better understanding and give diverse findings.

Definition of Terms

Below are definitions of some key terms as used in the study:

Electronic Payment System is a way of making transactions or paying for goods and services electronically without using cash or checks.

Accessibility has several definitions but for the purpose of this study the definition by the Oxford Living Dictionary has been adopted which is the quality of being easy to obtain or use. Accessibility will also mean ease of understanding or user-friendliness.

Organization of Study

The study is presented in five chapters. The Chapter One which is the introduction comprises the background to the study, the statement of problem, the research objectives and questions, the significance of the study, its limitations and finally the organization of the study. Literature related to electronic payment systems accessibility and challenges are reviewed in Chapter Two. The research design, study area and population, the sampling procedure, the data collection instruments and procedures are captured in Chapter Three. This chapter also includes data processing and analysis and a chapter summary. Chapter Four focuses on the presentation and discussion of the results and findings from the data processing and analysis stage. The final chapter, Chapter Five, provides a summary of the findings, conclusions, and the recommendations of this study.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter reviews literature in relation to electronic payment systems user accessibility and challenges. The chapter has three main headings which include theoretical review, conceptual framework and empirical review.

Theoretical Framework

In this section, the theories and models developed to study the acceptance by users and their adopting new technology are presented herein. These theories have been developed over the years and resulted from the extension of each other. These included, but were not restricted to, the Theory of Diffusion of Innovations (DIT) (Rogers, 1995) that started in 1960, the Theory of Task-technology fit (TTF) (Goodhue, and Thompson, 1995), the Theory of Reasonable Action (TRA) (Fishbein and Ajzen, 1975), Theory of Planned Behaviour (TPB) (Ajzen, 1985, 1991), Decomposed Theory of Planned Behaviour, (Taylor and Todd, 1995), the Technology Acceptance Model (TAM) (Davis, Bagozzi and Warshaw, 1989), Final version of Technology Acceptance Model (TAM) Venkatesh and Davis (1996), Technology Acceptance Model 2 (TAM2) Venkatesh and Davis (2000), Unified Theory of Acceptance and Use of Technology (UTAUT), Venkatesh, Morris, Davis and Davis (2003) and Technology Acceptance Model 3 (TAM3) Venkatesh and Bala (2008).

Technology Acceptance Models and Theories

Rogers (1995) proposed that the theory of ‘diffusion of innovation’ was to establish the foundation for conducting research on innovation acceptance and adoption. Rogers synthesized research from over 508 diffusion studies and came out with the ‘diffusion of innovation’ theory for the adoption of innovations among individuals and organization. The theory explicates “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 1995, p. 5). Basically, it is the process of the members of a social system communicated an innovation through certain channels over time known as diffusion. The Rogers’ (1995) diffusion of innovation theory explained that the innovation and adoption happened after going through several stages including understanding, persuasion, decision, implementation, and confirmation that led to the development of Rogers (1995) S-shaped adoption curve of innovators, early adopters, early majority, late majority and laggards.

Technology readiness (TR) refers to people’s propensity to embrace and use new technologies for accomplishing goals in home life and at work (Parasuraman and Colby, 2002). Based on individual’s technology readiness score and the technology readiness, Parasuraman and Colby (2002) further classified technology consumers into five technology readiness segments of explorers, pioneers, sceptic, paranoids, and laggards. This is similar to Rogers (1995) S-shaped adoption curve of innovators, early adopters, early majority, late majority

and laggards. The Diffusion of innovation or Technology readiness is vital for organization implementation success because it is market focus.

According to Goodhue and Thompson (1995) Task-technology Fit (TTF) emphasizes individual impact. Individual impact refers to improved efficiency, effectiveness, and/or higher quality. Goodhue and Thompson (1995) assumed that the good fit between task and technology is to increase the likelihood of utilization and also to increase the performance impact since the technology meets the task needs and wants of users more closely. This model is suitable for investigating the actual usage of the technology especially testing of new technology to get feedback. The task-technology fit is good for measuring the technology applications already release in the marketplace like in the google play store or apple store app (iTunes) etc.

The Theory of Reasonable Action (Fishbein and Ajzen, 1975) is one of the most popular theories used and is about one factor that determines behavioural intention of the person's attitudes toward that behaviour. Fishbien and Ajzen (1975) defined "attitude" as the individual's evaluation of an object and defined "belief" as a link between an object and some attribute, and defined "behaviour" as a result or intention. Attitudes are affective and based upon a set of beliefs about the object of behaviour (e.g: Credit card is convenient). A second factor is the person's subjective norms of what they perceive their immediate community's attitude to certain behaviour (e.g: my peers are using credit card and it is a status to have one).

Ajzen (1991) developed Theory of Planned Behaviour which is about one factor that determines behavioural intention of the person's attitudes toward that behaviour. The first two factors are the same as Theory of Reasonable Action (Fishbein and Ajzen, 1975). The third factor that is known as the perceived control behaviour is the control which users perceive that may limit their behaviour (e.g: Can I apply for the credit card and what are the requirements?).

Decomposed Theory of Planned Behaviour (Decomposed TPB) was introduced by Taylor and Todd (1995). The Decomposed TPB consists of three main factors influencing behaviour intention and actual behaviour adoption which are attitude, subjective norms and perceived behaviour control. Shih and Fang (2004) examined the adoption of internet banking by means of the TPB as well as Decomposed TPB.

There has been a great deal of research on the Theory of Reasoned Action (Ajzen and Fishbein, 1980; Sheppard, Hartwick, and Warshaw, 1988) Theory of Planned Behaviour (Ajzen, 1991) and Decomposed Theory of Planned Behaviour, (Taylor and Todd, 1995) but mostly used for products already in the marketplace and included the view of society (Subjective norm).

Technology Acceptance Model (TAM) was introduced by Fred Davis in 1986 for. An adaptation of Theory of Reasonable Action, TAM is specifically tailored for modeling users' acceptance of information systems or technologies. In 1989, Davis used TAM to explain computer usage behaviour. The goal of Davis' (1989) TAM is to explain the general determinants of computer acceptance that lead to explaining users' behaviour across a broad range of end-user computing

technologies and user populations. The basic TAM model included and tested two specific beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEU). Perceived Usefulness is defined as the potential user's subjective likelihood that the use of a certain system (e.g: single platform E-payment System) will improve his/her action and Perceived Ease of Use refers to the degree to which the potential user expects the target system to be effortless (Davis, 1989). The belief of the person towards a system may be influenced by other factors referred to as external variables in TAM.

The final version of Technology Acceptance Model was formed by Venkatesh and Davis (1996) after the main finding of both perceived usefulness and perceived ease of use were found to have a direct influence on behaviour intention, thus eliminating the need for the attitude construct. Venkatesh and Davis (2000) proposed the TAM 2. This study provided more detail explanations for the reasons users found a given system useful at three (3) points in time: pre-implementation, one-month post-implementation and three-month post-implementation. TAM2 theorizes that users' mental assessment of the match between important goals at work and the consequences of performing job tasks using the system serves as a basis for forming perceptions regarding the usefulness of the system (Venkatesh and Davis, 2000). The results revealed that TAM 2 performed well in both voluntary and mandatory environments.

Venkatesh and Bala (2008) combined TAM2 (Venkatesh and Davis, 2000) and the model of the determinants of perceived ease of use (Venkatesh, 2000), and developed an integrated model of technology acceptance known as TAM3.

The authors developed the TAM3 using the four different types including the individual differences, system characteristics, social influence, and facilitating conditions which are determinants of perceived usefulness and perceived ease of use. In TAM3 research model, the perceived ease of use to perceived usefulness, computer anxiety to perceived ease of use and perceived ease of use to behavioural intention were moderated by experiences. The TAM3 research model was tested in real-world settings of IT implementations.

Venkatesh, Morris, Davis and Davis (2003) studied from the previous models/theories and formed Unified Theory of Acceptance and Use of Technology (UTAUT). The UTAUT has four predictors of users' behavioural intention and there is performance expectancy, effort expectancy, social influence and facilitating conditions. The five similar constructs including perceived usefulness, extrinsic motivation, job-fit, relative advantage and outcome expectations form the performance expectancy in the UTAUT model while effort expectancy captures the notions of perceived ease of use and complexity. As for the social context, Venkatesh et al. (2003) validation tests found that social influence was not significant in voluntary contexts.

Overview of Electronic Payment Systems in Ghana

Ghana's payment system has improved considerably over the last decade and continues to evolve to meet the country's development needs. The system has undergone significant changes, influenced not only by global trends in the development of payment systems, but also by changing economic, financial and public policy objectives, as well as by the development and growth in the ICT

sector at the local level. The development of Ghana's payment system has been driven by seven key objectives which are to: prevent and/or contain risks in payment, clearing and settlement systems; establish a robust oversight and regulatory regime for payment and settlement systems; bring efficiency to the fiscal operations of the Ghana Government; deepen financial intermediation; discourage the use of cash for transactions whilst encouraging the use of paper-based instruments for payments as part of the short-term development plan; promote financial inclusion without risking the safety and soundness of the banking system; develop an integrated electronic payment infrastructure that will enhance interoperability of payment and securities infrastructures (Kumaga, 2010).

Overall, the payments landscape in Ghana has been positively impacted by improvements in the country's economic infrastructure, such as the availability of GSM technology, increased Internet penetration, and the growth of ATMs over the last ten years. Mobile payments have also grown in popularity since 2012. In fact, between 2012 and 2015, the total volume of transactions for mobile payments increased by 5,866% (Bank of Ghana, 2017). According to the Bank of Ghana, this is largely due to recent collaborative efforts by banks and telecom operators to reach unbanked segments of society that make up 70% of Ghana's total population. Ghana also has more mobile phones than the population, with around 36.5 million mobile subscribers for a total population of around 27 million. The e-money initiatives also resulted in a significant increase in the value

of transactions in 2015, the value of all e-money transactions (ACH credit, e-zwich, cards, mobile money and ACH debit) reaching GHS 51.8 billion.

Definitions of Electronic Payment Systems

Electronic payment system does not lend itself to universal definition. According to Roy (2015) Electronic payment refers to cash transactions using electronic means. In general, this involves the use of computer networks such as the internet and digital stored value systems. The system allows bills to be paid directly from bank accounts, without the account holder being present at the bank, and without the need of writing and mailing cheques.

Electronic payment (electronic payment), other electronic means, as opposed to payment by check and cash (Agimo, 2004). It has also been defined as "transfer a monetary claim to a portion acceptable to the beneficiary" (Alam, Ali, and Jani, 2011). According to (Kalakota, Stallaert, and Whinston, 1996), electronic payment is a financial exchange between buyer and seller. The content of this exchange is usually the form of the electronic financial instrument, such as encrypted credit card numbers, electronic checks, or digital cash that is backed by a bank or an intermediary, or by a legal tender.

Forms of Electronic Payment Systems in Ghana

There are quite a number of e-payment services that have been developed within the payment system around the globe. These include electronic cheques, e-cash, credit cards and electronic fund transfers (Kabir, Saidin, and Ahmi, 2015). In general, online payment can be divided into two types: one in view of the

Internet Banking Payment Gateway (IBPG) and one in light of the outsider payment platform. The first one is a sort of a direct mode of payment, and the client understands the online payment via an e-business framework which is connected to the banking framework. On the other hand, the second one involves money exchange from the account of purchaser to merchant's account by means of an outsider or third party payment platform. The IBPG lies amongst the banking process system and the Internet; it is a system which has been especially made for managing payment and payment authorization. The IBPG is the link which links the purchaser, vender and the bank. The online mode of payment which is based on IBPG cannot come into existence without the payment gateway (Qifeng, Zhengwei, and Ping, 2007).

According to the study of (Yu, Hsi, and Kuo, 2002) there are four classifications of electronic payment systems worth mentioning: electronic cash, online credit card payment, small payments and electronic cheques. They further stressed that every one of these systems has its own merits and demerits. It was emphasized that each type could be accessed through these four distinct qualities viz.: Technological aspect, Economic aspect, Social aspect and Institutional and law aspects. In reality, we encounter two uniquely varied kinds of payment systems (Aigbe and Akpojaro, 2014).

Internet-Based Payment System

The Internet-Based payment system comes in the following four modes:

Debit Card: The debit card is a prepaid card and also called an ATM card. A person has an account with the issuing bank, which gives a card with a personal identification number, when making a purchase. With almost every bank account you are issued a debit card (Kaur et al., 2012; Stanley, 2008). One of the most generally utilized frameworks for e-payment is the debit card. The debit card technique consolidates the elements of the Automatic Teller Machine (ATM) card with Internet banking (Kim, Tao, Shin, and Kim, 2010). A Debit card holder pays for his buys directly through the bank replacing cheque and physical money. In this system of debit cards, clients store money ahead of time into the bank and draw out the same at the time of buying. In the real world, there are two sorts of debit cards: i) Online debit card, and ii) Offline debit card.

Automated Teller Machine (ATM): ATM is a combined computer terminal, with cash vault and record-keeping system in one unit, with a plastic card containing a Personal Identification Number (Nuthan, Nagarathna, Sumana Nayaka, and Vidya Rathna, 2015). Mostly located outside of banks, it can also be found at airports, shopping malls, and places several retail banking services to customers. First introduced as cash dispensing machines, it now provide a wide range of services, such as making deposits, funds transfer between two or more accounts and bill payments (Abor, 2005). The Trust Bank first introduced ATMs in 1995 that allow customers 24-hour access to their funds. Since then almost all the major banks have followed suit.

Credit cards: This is other type of e-payment system in which there is utilization of the card issued by a monetary organization to the cardholder for making

payments on the web or by means of an electronic gadget without the utilization of paper money. Contrasted with different EPS, it is not proper to use credit cards for exchanges of small value i.e., exchanges which involve not as much as a dollar (Kim, Tao, et al., 2010).

Smart card: A smart card is about the size of a credit card, made of a plastic with an embedded microprocessor chip that holds important financial and personal information. The microprocessor chip is loaded with the relevant information and periodically recharged. In addition to these pieces of information, systems have been developed to store cash on the chip. The money on the card is saved in an encrypted form and is protected by a password to ensure the security of the smart card solution. In order to pay via smart credit is necessary to introduce the card into a hardware terminal. The device requires a special key from the issuing bank to start money transfer in one direction. Smart cards can be disposable or rechargeable (Agyeiwaah, Gloria Afua Serwaah Anane, Appiah, and Opoku-Ware, 2014; Kaur et al., 2012).

Other Electronic Payment Systems

Electronic Purses/Wallets: There are two categories of electronic wallet (e-wallet), these are; E-wallets that store card numbers; this is a virtual wallet that can store credit card and debit card information. Other information that can be stored on this card is passwords, membership cards, and health information. Some of the e-wallets make it easier for consumers to buy goods using the card (Antwi, Hamza, and Bavoh, 2015). Electronic wallets that store card numbers and cash;

The second category of a digital wallet is where consumers store cash, which has been transferred from a credit card, debit card or virtual check into their electronic wallets. It works like a virtual savings account where fees are charged for ongoing purchases, particularly micro-payments (Saputra, Azhari, Engel, Nugraha, and Supangkat, 2013).

Electronic Funds Transfer at Point of Sale (EFT/POS): EFT/POS is an online system that involves the use of plastic cards in terminal on merchants' premises and enables customers to transfer funds instantaneously from their bank accounts to merchant accounts when making purchases. It uses a debit card to activate the transfer process (Read, 1989).

Mobile Banking and Money Transfer: According to Zika (2005), a mobile payment is an electronic payment made via a mobile device (for example, a mobile phone or personal digital assistant, PDA). This uses a mobile device to initiate and confirm electronic payment. In the field of payments, the mobile phone opportunity is visible on the integrated SIM card. The advantage of not needing to use other devices such as modems, point of sale terminals, and card readers for mobile payments is also quite clear (Zika, 2005). Huang, Dai, Singh, and Huang, (2015) further developments in the mobile payments are inevitable in the near future. Mobile devices might be used in micro-payments such as parking, tickets, and re-charging mobile phones. Currently, most Banks provides active mobile banking services as SMS Banking. This allows customers to do some banking inquires on their mobile phones. To the following transactions: balance inquiry, transaction inquiry, cheque book request, statement of request, and

payment of utility bills. With this product, customers can easily check their account balance. Among the mobile money transfers in Ghana are the tiGO cash from cash from tiGO, the MTN money transfer from MTN and the zap from airtel.

Telephone Banking: Telephone banking or remote banking is a form of virtual bank that provides financial services via telecommunication devices. As part of this mechanism, the customer conducts transactions by dialling a touch-tone telephone connected to an automated system of the bank. This is normally done with Automated Voice Response (AVR) technology (Guru, Vaithilingam, Ismail, and Prasad, 2000). Tele-banking has many benefits for end users. To the customers, it provides increased convenience, expanded access and significant time saving. Instead of going to the bank or visiting an ATM, retail banking serves the same purpose for customers at their offices or homes. This saves time and money, and gives more convenience for higher productivity (Leow, 1999). Telephone banking is on the ascendancy in Ghana. "Barclays Bank Ghana launched its telephone banking services in August, 2002. SSB Bank also launched its" Sikatel "or SSB Call Center telephone banking in 2002. The services available with this system are; to ascertaining credible information about the bank's products, the customers' complaints, bank statements and cheque book request and any other complaints and inquiry (Abor, 2005).

Personal Computer Banking (Home Banking): This term is used for a variety of related methods by which a payer uses an electronic device at home or in the workplace to initiate payment to a recipient. In addition to computer technology,

it can be done using the phone and interactive voice response (Huang et al., 2015). PC-Banking is a service that allows the bank to access information about their accounts via a proprietary network, usually with the help of proprietary software installed on their personal computer (Abor, 2005). It is used to perform a variety of retail banking tasks, and offers the customer 24-hours services. "PC-banking has the advantage of reducing cost, increasing speed and improved flexibility of business transactions" (Guru et al., 2000).

Some banks have started to offer PC banking services, mainly to corporate clients, to initiate a range of automated transactions from their own offices or homes. "The banks provide the customers with the proprietary software, which they use to access their bank accounts, sometimes via the World Wide Web (WWW). This is on a more limited scale, but it has been more of a focus on corporate clients "(Abor, 2004). Banks offering PC banking services in Ghana includes; GCB, Ecobank, SCB and Barclays. Stanchart with their Domestic Payment Service (DPS), allows subscribers to transfer payment and direct debit information in an electronic format from their computers to the bank.

Online/Internet Payments: This is the means by which customers use the Internet network. Customers can access their bank accounts and make transfers through a web site provided by the bank and complying with some rigorous security checks. The Federal Reserve Board of Chicago's Office of the Controller of the Currency (OCC) Internet Banking Handbook (2001) describes Internet Banking as "the provision of traditional (banking) services over the internet". The Internet is able to offer instantaneous settlement of transactions and the prospect

of a highly cost effective payment system for low value transactions. The Internet has the potential to reach the majority of customers since it can disseminate "advertising material" through World Wide Web home pages and product databases (Mackie-Mason and White, 1997).

Electronic Cheque: Electronic checks are used in the same way as paper checks - the clearing between pay and pay is based on existing and well known banking settlement system. The only difference between paper and electronic checks is the dematerialization of the payment instrument which is passed on via computer networks like Internet in the later technology. E-Check proposed by Financial Services Technology Consortium (FSTC) is an example of the electronic check. Electronic checks are also known as virtual checks that allow consumers to use Internet payments. The buyer fills out a form (that looks like a check on the screen) with the necessary information. The information then goes through a transaction service, depending on which way one chooses to accept check payments (Saputra et al., 2013)

Digitized 'E-Cash' Systems: E-cash payment system takes the form of encrypted messages and represents the encrypted equivalent of digitized money. One key attraction is that it avoids the time and expense associated with becoming an approved credit card accepting merchant. It does not require the use of intermediary; therefore anyone can effect payment directly (Saputra et al., 2013). However, most present schemes require the direct involvement of a bank for its system of digital cash issuance. According to Kim, Mirusmonov, and Lee, (2010)

A bank is integral to the scheme, since it is required to hold collateral and to provide ultimate settlement of e-cash to more directly convertible currencies.

Availability of Electronic Payment Systems

Availability of electronic payment refers to how ready one can access the electronic payment system without any bottleneck challenges. Users of electronic payment system prefer to have a payment system that allows them make or receive payments at whatever time required. Payment transactions must be simple and small. Users would not be happy to lose any amount due to a network or system crash (Kim, Mirusmonov, et al., 2010).

Users understand the availability of an electronic payment system as one that has all its networking services, software and hardware components adequately reliable. Break downs and periodic recovery from crash failures creates discomfort for users and such situation affect the intention and desire of users to patronise the electronic payment system.

Antwi et al., (2015) conducted a study on examining the effectiveness of electronic payment system in Ghana: the case study of e-Zwich in the Tamale Metropolis. The study found out that the adoption and use of the e-zwich was low mainly due to the inadequate availability of point of sale terminals at shopping points among others. According to his study, these are affecting the perceived ease of use even though the perceived usefulness of electronic payment systems is strongly present among individuals and businesses. He further recommended customer education and wide spread deployment of e-zwich point of sale terminals to merchants.

Key Challenges facing Ghana's payment systems

The greatest barrier to the BoG's desire to shift towards a cash-lite economy is the continued high cost of electronic transactions. Indeed, at a recent session hosted by KPMG at the 2016 Ghana Economic Forum (GEF), it was noted that customers are unhappy about the cost of electronic transactions when compared against other African markets. They may have good reason to complain: an instant interbank transfer of GHS 1,600 costs around USD5 at Ghana's banks but just USD1 at Nigeria's banks. In part, this is because Ghana's banks are at liberty to fix their own prices for services. This is a situation in which consumers are faced with a complex array of products, services and prices. The BoG may need to examine the experience of other African markets where the cost of payments is standardized to encourage customer adoption and financial inclusion. In South Africa, for example, the Reserve Bank recently embarked on a project to review the cost components of payment services that resulted in fixed charges for all banks.

Improved infrastructure and delivery channels will also be required in Ghana. Indeed, while ATMs are fairly common, particularly in key cities, it is rare to find a device at a merchant. Even where they have been deployed, they are often out of service due to challenges with telecommunication infrastructure. As a result, most debit card-holding customers tend to limit their use to withdrawing cash. Clearly, the rollout of POS devices will need to be accelerated. However, it must be noted that these statistics are of limited value and are of limited value. For example, there are no tabulations of the total number of POS devices in

Ghana and no readily-available data on their use. Improving interoperability between mobile money players will also help drive adoption. Today, only about 37% of registered mobile money customers are active and many complain about the impossibility of making mobile money transactions between different networks. The introduction of the Interconnection Clearinghouse will greatly improve the situation, but more needs to be done to improve integration and interoperability between different providers. Andoh (2014) also conducted a study on credit card system in Ghana: an investigation of why credit cards are not widely used in Ghana and how widespread use may be implemented. The study found out that though the awareness on credit cards was high in Ghana (84%), only 1% of the respondents actually had credit cards. The 1% of the sample that had credit cards was males and had tertiary education. The study also noted that as income level increases the numbers of consumers with no credit cards decreases. It was also revealed that the infrastructure needed for widespread use of credit card system in the country was lacking.

There is also a need for operators to implement the relevant security certifications such as ISO 27001 and PCI DSS. The BoG has taken a step in the right direction with the requirement for e-money operators to comply with these standards. Today, payment initiatives are largely driven by GhIPSS and other private organizations. The BoG has also taken significant steps to elevate payments, raising payments from a 'unit' designation within the BoG to a full-fledged 'Department'. But efforts will step up considerably in order to accelerate nation-wide adoption. In Nigeria, for example, a Presidential mandate has been

issued for the adoption of e-Payments across the Federal Government and the country has seen rising numbers of projects under the Cashless Nigeria Project.

User-friendliness of Electronic Payment Systems

Davis (1989) described the user-friendliness of a system as the degree to which the user of the system uses the system free from effort (Davis, 1989). User-friendliness can simply be referred to as the ease in using a system. It is mostly concluded by many researchers the ease in using a system contributes to an increase in users' behavioural intention. Several studies have been conducted by many scholars in an attempt to find out if the user-friendliness of a system has any impact on the use of a system. For example, a research was conducted on the use of Computer Based Assessment (CBA) system among undergraduate students. The findings from the studies indicated that the user-friendliness nature of system significantly affected the student's willingness and readiness to use the system (Terzis and Economides, 2011).

In a study by Bezhovski, (2016) on electronic payment systems: a user-centered perspective and interaction design, it was realised that ease of use was rated as a characteristic of high priority when it comes to the choice of an electronic payment system. According to the study, 75.2% of the respondents preferred debit cards because they find them easy to use. In another research, the user-friendliness nature of electronic air-ticketing directly affects the increase in the purchase of online airline tickets (Guritno and Siringoringo, 2013). A research on the use of 3G mobile service, the user-friendliness of a smart phone largely affected found that use of the service by the users in Malaysia (Suki & Suki,

2011). On the other hand, other researchers are opinion the user-friendliness of a system does not have direct significant influence on perceived usefulness (Chow et al., 2012; Nasri and Charfeddine, 2012). Chow et al. (2012) and Nasri and Charfeddine (2012) in their findings concluded that the user-friendliness of a system cannot guarantee the direct likelihood of the system being liked and used by the users, unless if the user is aware of its usefulness.

Another study was conducted by Haruna (2012) on the challenges of electronic payment systems in Ghana using e-Zwich as a case study. The study revealed a number availability challenges that are militating against the success of the e-Zwich service in the country. These challenges included link failure, frequent breakdown of machines, slow process of service delivery and inaccessibility of the point of sale devices before and after banking hours.

Patronage of Electronic Payment System

In recent times, small businesses have created opportunities for its customers to have different means of making their payment (Mcdougall and Levesque, 2000). In the past, cash and cheques were the only option offered as a means of payment but now small businesses report that the number of online electronic payment has become the preferred choice particular companies having customers around every corner of the global. Electronic payment system like PayPal has become the most used by these customers. Again, the introduction of more novel payment methods such as contactless and mobile phone apps has increased the means of making payment for businesses. Fortunately, in our part of

the globe the knowledge about contactless mobile payments is generally picking up among small businesses and consumers alike.

In a recent survey among small business in the UK by the Social Research Institute, cash transactions account for a small proportion of the total transactions undertaken by small businesses as a whole. 67% of small business accepting cash payments, report that less than a quarter of payment received were in cash. Only 21% of these small business reports of receiving more than half of payments made in cash. The food and Accommodation sector was seen as the sector that received more payment through the use of electronic payment systems. About 59% report that most of the payments were made using electronic payment systems. The reasons given by those that accepted payment with cash were due to the fees charged by the electronic payment system providers were too high relative to the value/volume of transactions, and the business and their customers prefer to transact using cash.

Challenges that Hinder User Accessibility of Electronic Payment System

In spite of the numerous advantages of using electronic payment systems, they have their own difficulties and challenges even in today's technologically advanced world. The challenges which have been identified by previous researchers are Infrastructure, Regulatory, Legal issues and Socio-Cultural issues (Rachna and Singh, 2013).

Infrastructure: Infrastructure is fundamental for the effective execution of electronic payments. Appropriate infrastructure for electronic payments is an

issue (Kumaga, 2012). For electronic payments to be fruitful, it is necessary to have a financially savvy and reliable infrastructure that can be availed by dominant part of the populace. In developing nations, large portions of the country do not have banks and have no access to basic infrastructure that drives electronic payments. In connection to this, a research work by_(Omotunde, Sunday, and John-Dewole, 2013) reveals that in Nigeria, Electricity and Telecommunication are not accessible all through the nation, which contrarily influences the advancement of e-payments.

Regulatory and Legal Issues: National, provincial or global arrangement of laws, standards and different other directions are imperative prerequisites for the effective execution of e-payment plans. A significant portion of components incorporate guidelines on tax evasion, supervision of e-money organizations and commercial banks by supervisory specialists; central banks should keep an oversight on payment systems, buyer and information protection, participation and rivalry issues. As indicated by (Kumaga, 2012) the worldwide and virtual nature of e-payment additionally brings up legal issues, for example, which laws are relevant in debated cases and which jurisdiction will be competent, legitimacy of digital signatures and electronic contracts. A legitimate and administrative structure that builds confidence and trust helping technical endeavours is a vital issue to be tended to in executing e-payments.

Cultural Challenges: Social and cultural dissimilarities in outlooks and the utilization of various types of cash (e.g. utilization of credit cards in North America and utilization of debit cards in Europe) muddle with the job of building an

electronic payment system that is relevant at a global level (Omotunde, Sunday, and John-Dewole, 2013). As indicated by Kumaga (2012) discrepancy in the level of the security required and productivity among individuals of various societies and the degree of advancement worsens the issue.

Buyer's trust and confidence in the customary methods of payment make clients more averse to embrace new innovations. New innovations will not rule the market until clients are sure that their privacy is ensured and satisfactory confirmation of security is safeguarded (Odior, 2012). New advances likewise need to stand the test of time so as to secure people's confidence, regardless of the fact that it is simpler to use and less expensive than the more established techniques.

Improving User Accessibility of Electronic Payment Systems

Identify Ways to Increasing Interests among Businesses

Most electronic payments cost only one-third to one-half as much as a paper-based non-payment and it is clearly understood that the cost of a payment system could be reduced if it is shifted to electronics. Therefore, bank should provide payment services according to their differential costs of services, so users may choose the payment instrument with the lowest net price/non price cost. If the banks can move their accounts using electronic debit cards, their costs will be reduced, and they will be increased. In addition, for consumer-to-business point-of-sale and bill payments, electronic payments will reduce the need for business capitalization with the delay in processing paper-based non-cash payments. The choice of which payment instrument is used for a particular type of transaction is

governed by the average value of the transaction. Research studies have also proved that they have different types of payment methods. For example, ATM, debit card and PC banking are more prevalent among those who use direct deposit than among others. Consumers with similar education, income, and age share similar preferences for payment methods. Therefore, the bank's role is to facilitate and encourage the payment of payment. Alternative payment technologies can be provided freely and are available to those competing technologies. In addition to this, customers are more likely to be effectively and easily available.

Reduce the Usage of Traditional Payment Methods

The traditional payments, where the clumsy and expensive way to handle coins and notes is being replaced by efficient electronic payments initiated by various types of plastic cards. This is a tantalizing prospect for the twenty first century. Both the costs and the prices of paper-based payments are higher than their electronic counterparts. Traditional payment is not the preferred method of payment, particularly for higher value transactions, and the use of other methods. Clearly, some substitution will take place, but the nature and extent of this substitution will depend on a number of factors. People will tend to prefer payment methods, which are cheaper, more convenient and less risky than alternatives available. May be used for multiple purposes, rather than having to use a variety of methods to meet different needs. The level of acceptance of particular payments by retailers, merchants and other suppliers will obviously have an important influence on the take-up of new approaches. Persuading

customers who are more likely to pay more attention to the cash flow, they need more attention to relationship marketing.

Summary Chapter

Reviewed literature shows that innovation and adoption of technology happens after going through several stages including understanding, persuasion, decision, implementation, and confirmation. Ghana, like most developing economies are yet to fully accept and use electronic payments systems especially due to the numerous challenges identified studies reviewed in this chapter. It is important that these challenges are addressed to ensure fast adoption of electronic payments systems which will accelerate economic growth in Ghana.

CHAPTER THREE

RESEARCH METHODS

Introduction

The methodology section of the study provides the basis through which the empirical data is obtained to answer the research questions and hence by extension the research problem. This chapter focuses on the method that was employed to collect the data for the study. It discusses the research design, population for the research, sample and sampling procedure, the research instruments, data collection procedure, data analysis procedure and ethical issues.

Research Design

There are several approaches to research depending on the nature of the purpose or research problem. According to Yin (2003), research can be designed using descriptive, exploratory and explanatory approaches. Exploratory research is conducted to clarify and research a better understanding of the nature of the problem; descriptive research is used when the problem is known, but the researcher does not know the whole situation. Explanatory research studies a problem in order to find any causal relationship between variables in question (Saunders, Lewis, and Thornhill, 2009). Research can also be based on a qualitative or quantitative approach. Quantitative research produces statistical proof using numerical data whereas qualitative research focuses on the perception of people's experience, behaviour, and attitudes (Dawson, 2002). Saunders et al. (2009) argue that more than one purpose can be employed in a study.

This study is an exploratory type. This study was conducted to clarify the phenomenon under study and gained a better understanding of it. The study also used both qualitative and quantitative research method to analyse the data. This approach allows generalization of conclusions and flexibility in the treatment of data, specifically in terms of statistical analyses, comparative analysis and repeatability of data collected in order to verify reliability of collected data and result and to give detail discussion of the issues involved in the study, (Knight and Cross, 2012).

Study Area

According to the Population and Housing Census (2010) the total population of the Nzema East municipality is 60, 828, made up of 29,947 males and 30,881 females. The district's population constitutes 2.6 percent of Western Regional population of 2,376,021 and the lowest compared to the other twenty-one Districts in the region. The report indicates that out of the total population of 60,828, 14.6 percent are in the age group of 0-4, and 13.9 percent are in the age group 5-9, whilst those aged between 10-14 account for 12.6 percent. Those in the age bracket of 15-19 record 10.9 percent. However, those aged 70 years and above constitute 2.8 percent. The 2010 population census shows that 32.1 percent of persons aged 12 years and above in the Municipality own mobile phones. A comparison among the sexes shows that the proportion of males (38.2%) who own mobile phones is higher than their female counterparts (26.4%).

The report also shows that 2.8 percent of persons aged 12 years and older in the Municipality use the internet facility. This is much lower than the regional

average of 6.4 percent. Just as in mobile phone ownership, more males (3.8%) than females (1.9%) use internet. The proportions of males who use internet are about twice the proportion of females who use it.

Ownership of desktop or laptop computers in the home is an indication of enhancing self -study and especially the use of internet. There are 2.7 percent of households who own a desktop computer or laptop computers in the Municipality. More male-headed households (3.4%) own desktop or laptop computers as compared with their female counterparts (1.4%).

Study Population

Denscombe (2010) defines population as the group that one is interested in studying. The population defined for this study involves users and non users of electronic payment systems in the Nzema East Municipality. These include individuals, businesses, mobile money merchants, supermarkets and individuals that use or do not use electronic payment systems. According to the 2010 population and housing census, out of the total number of 60,828 people in the municipality, 35,868 of them are above 15 years (Ghana Statistical Service, 2014). The report also showed that 49.2% of the people are males as compared 50.8% being females. Therefore, the population for the study is 35,868. Again, the report indicates that 30.9% of the people aged 12 years and older have no education, 57.0% have basic education. Also, 8.2% have secondary education. However, only 0.6% has attained tertiary education.

Sampling Procedure

Bernardo (2002) defines sampling as taking any portion of a population or universe as a representative of that population or universe. The reason for sampling is to expand the representatives of the subjects under study. A number of sampling techniques were employed here to aid for the research findings. Sampling techniques are usually grouped as probabilistic or non-probabilistic (Saunders et al., 2009). This research adopted both a non-probabilistic and probability sampling technique. Convenience sampling was used to select three hundred and eighty (380) respondents comprising proprietors and managers of businesses, individuals and mobile money merchants in the Nzema East Municipality. The sample size was calculated using the Qualtrics sample size calculator. Qualtrics offers a sample-size calculator that can help you determine your ideal sample size in seconds (Sample Size Calculator, 2017). The confidence level of the sample size is 95% with a margin of error of +/-5%.

Convenience sampling technique is a statistical method of drawing representative data by selecting people because of the ease of their volunteering or selecting units because of their availability or easy access. The advantages of using this type of sampling technique are the availability and the quickness with which data can be gathered. The disadvantages are the risk that the sample might not represent the population as a whole, and it might be biased by volunteers.

Data Collection Instruments

Questionnaires were used to collect primary data for the study. This was done following a thorough literature search that was conducted to determine and categorize concepts and variables that have been used in similar past studies. The instruments comprised a mix of open-ended, close ended questions and Likert scale statements. Respondents that could not read or write were offered assistance by the respondents to ensure accuracy and completion of each questionnaire.

Data Collection Procedure

Data was collected from both either primary or secondary sources for the study. All of the data sources complement each other and a good research should have as many data sources as possible (Beaumont, Bocci, and Haziza, 2014). The sources of data for a study include documentation, interviews, observations, archived records, and surveys among others.

Both primary and secondary data were used in this research. The primary data were obtained from the survey instruments which comprise the questionnaire and interview responses from the participants in the survey. The secondary data used in this study was obtained from literature review from journals, books, online articles, and documentation on electronic payment systems and users accessibility.

Data Processing and Analysis

Data collected from the field were analysed using descriptive statistics. Prior to the analyses, the data were edited and coded to ensure consistency. The

Statistical Package for the Social Sciences (SPSS version 16.0) was employed to process and analyse the data. Analytical methods such as frequencies, percentages, proportions were then used to analyse the data collected from the field. The results were then presented in the form of tables, charts and graphs.

Reliability

Research validity requires that the goals of a study are achieved without errors and that explanations fit into set out descriptions (Janesick, 1994; Atroshi, Gummesson, Johnsson, Ornstein, and Rosén, 2000). According to Yin (2003), construct, internal and external validity are the three main types that are used. This study used multiple sources of evidence; reviews by supervisor, field tests of survey, reliable questionnaire scales, close-ended and open ended questions to ensure the construct and internal validity of the study (Stroebe, Hansson, Stroebe, and Schut, 2002). To ensure external validity, the study used a sample size that is representative of the study population. The respondents of the survey were individuals and organisations in the municipality. This study used a logical as well as sequential procedure and explanations in the chapters. All these were done to achieve a high degree of reliability.

Ethical Issues

The permission of the respondents involved in the survey was sought before they were engaged in the activities. Respondents were duly informed about the purpose of the research and any information received was confidentially handled and not modified in any way. The researcher also sought for permission

from the management of the selected organisations where necessary before interacting with them. This ensured smooth administration of questionnaires and cooperation from both individuals and businesses that were used for the survey.

Summary Chapter

This study is an exploratory type and was conducted to clarify the phenomenon under study and gained a better understanding of it. The study was conducted in the Nzema East Municipality. Convenience sampling technique was used to select 380 respondents for the purpose of the study. Questionnaires were used to collect primary data while other literature was thoroughly reviewed to gain a better perspective of the topic. The Statistical Package for the Social Sciences (SPSS version 16.0) was employed to process and analyse the data for interpretation. The study was reviewed by a supervisor to ensure reliability. The necessary ethical issues were considered to ensure corporation and collaboration to achieve the study results.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter deals with the presentation and analysis of data which were collected from respondents. The data gathered were analysed both quantitatively and qualitatively. The data presentation and discussion took into cognizance some descriptive tables and statistical models such as percentages, frequencies, cross tab among others. Inferences were then drawn based on the analysis.

Socio-demographic Characteristics

This section describes the socio-demographic characteristics of respondents. Data gathered and analysed were about socio-demographical variables such as gender, age, educational levels, employment status, and monthly income brackets of respondents. Table 1 indicates the socio-demographic characteristics of respondents.

Table 1: Socio-Demographic Characteristics of Respondents

	Frequency	Percent
Sex		
Male	225	59.2
Female	155	40.8
Total	380	100
Age of Respondents		
18 - 25 years	152	40.0
26 - 35 years	115	30.3
36 - 45 years	67	17.6
46 - 55 years	31	8.2
56 years and Above	15	3.9
Total	380	100.0
Respondents Highest academic achievements		
No formal education	69	18.2
Basic/MSLC	92	24.2
Sec/Voc/Tech	123	32.4
Tertiary (HND and Degree)	84	22.1
Post-graduate (Master's Degree)	12	3.2
Total	380	380
Level of Employment		
Employed (Part time/ full time/ self-employed)	263	69.2
Unemployed	117	30.8
Total	380	100.0
Monthly Income Brackets of Employed Respondents		
Less than GH¢ 200	62	16.3
From GH¢ 200 - 400	110	28.9
From GH¢ 401 - 600	132	34.7
More than GH¢ 600	76	20.0
Total	380	100

Source: Boakye-Marfo (2018)

Table 1 shows that 59.2% of the respondents were males as compared to 40.8% females. Also, it indicates that 40% of the respondents were between the ages of 18 year and 25 years while 30.3% of them were between the ages of 26 to 35 years. This means that 70.3% of the respondents were either 35 years old or less than 35 years. Again, 24.2% of the respondents have had at least basic education, 32.4% have had secondary, Vocational or Technical education, whereas 22.1% have had tertiary education. However, 18.2% of the respondents had no formal education. Again, 69.2% of the respondents were employed as against 30.8% that were unemployed. From the table, 34.7% of the respondents earn between GH¢ 401 to GH¢ 600 as 20.0% of them earned at least GH¢600 a month. Nonetheless, 45.3% of the respondents earned less than GH¢ 400 each month.

Forms of Electronic Payment Systems Available

The study sought to find out the various forms of electronic payment systems available in Nzema East Municipality. First of all, respondents were presented with a list of types of electronic payment systems available and were requested to identify those that they knew were available in the municipality. Table 2 indicates which types of electronic payment systems respondents had knowledge about its existence in the municipality.

Table 2: Knowledge of respondents on Electronic payment systems available

Payment System	Frequency	Percentage
ATM Card	321	84.5
Point of Sale Devices (E-Zwich)	281	73.9
Online/ Internet Payment	186	48.9
Mobile Money Transfer/Payment	380	100.0
Plastic Cards (Credit cards, Debit cards and Smart cards)	228	60.0
Electronic Cheque	10	2.6
Digitised E-Cash systems	8	2.1
Telephone Banking	42	11.1

Source: Boakye-Marfo (2018)

The study revealed that all the respondents were aware of the existence of mobile money transfer or payment system, 84.5% knew about Automatic Teller Machine Cards, 73.9% knew about Point of Sale Devices such as E-Zwich while 60% of the respondents knew about the existence of Plastic Cards (credit cards, debit cards and smart cards) in Nzema East Municipality. This shows that mobile money transfers or payment is the most popular electronic payment system in the Nzema Municipality. Also, the study showed that 48.9%, 11.1%, 2.6% and 2.1% of the respondents were aware about the existence of online/internet payment systems, Telephone banking, Electronic cheques and Digitised E-Cash systems in the municipality.

The Extent of Patronage of Electronic Payment Systems

The study also sought to investigate the extent to which respondents patronize electronic payment systems available in the municipality. First and foremost, respondents were expected to indicate whether they had used any of the types of electronic payment systems available in the municipality for any transaction.

Table 3: Forms of Electronic Payment Systems used by Respondents

Payment System	Used	
	Frequency	Percentage
ATM Card	202	53.2
Point of Sale Devices (E-Zwich)	86	22.6
Online/ Internet Payment	79	20.8
Mobile Money Transfer/Payment	367	96.6
Plastic Cards (Credit cards, Debit cards and Smart cards)	138	36.3
Electronic Cheque	2	0.5
Digitised E-Cash systems	2	0.5
Telephone Banking	5	1.3

Source: Boakye-Marfo (2018)

According to Table 3, 53.2% of the respondents had used ATM cards to transact one activity or the other, 22.6% had used point of sale devices such as the E-Zwich, 20.8% were familiar with online/internet payment whereas 36.3% had used plastic cards such as credit cards, debit cards and smart cards to transact an activity. The study found out that 96.6% of the respondents had used mobile

money transfer or payment at least ones in their life time as compared to only 0.5% using digitised E-Cash system and electronic cheque for transactions. Again, 1.3% of the respondents had used telephone banking to transact an activity.

Respondents were asked to indicate how often they use electronic payment systems for transactions. The responds of respondents are presented in the table.

Table 4: How often respondents use electronic payment systems for transactions

Payment System	Very Often		Often		Not Often	
	Freq	Percent	Freq	Percent	Freq	Percent
ATM Card	25	6.6	109	28.7	67	17.6
Point of Sale Devices (e.g. E-Zwich)	18	4.7	54	14.2	14	3.7
Online/ Internet Payment	15	3.9	34	8.9	26	6.8
Mobile Money Transfer/Payment	103	27.1	203	53.4	61	16.1
Plastic Cards (Credit cards, Debit cards and Smart cards)	27	7.1	68	17.9	42	11.1
Electronic Cheque	0	0.0	0	0.0	2	0.5
Digitised E-Cash systems	0	0.0	0	0.0	2	0.5
Telephone Banking	0	0.0	0	0.0	5	1.3

Source: Boakye-Marfo (2018)

The results of the study showed that mobile money transfer/payment was used very often by 27.1% of the respondents as 53.4% of the respondents used the system often. However, 16.1% of the respondents regarded their use of the mobile money transfer/payment as not often. Also, 7.1% of the respondents considered their use of Plastic cards for transactions as very often, 17.9 as often whereas

11.1% as not often. ATM card was very often used by 6.6% of respondents, 28.7% of the respondents used it often as compared to 17.6% that did not use the system often. The study also showed that 4.7% of the respondents used point of sale devices very often for transaction, 14.2% uses it often while 3.7% uses it not often for transactions. A total of 2.3% of the respondents that used electronic cheque, telephone banking and digitized e-cash system for transactions did not use them often.

Table 5: Usage of electronic payment system

Uses of Electronic Payment System	Frequency	Percentage
Purchase a product	144	37.9
Pay for a service	122	32.1
Pay bills	93	24.5
Money transfer	327	86.1

Source: Boakye-Marfo (2018)

It is evident from Table 5 that respondents use electronic payment systems for various forms of transactions. The results shows that 86.1% of the respondents used electronic payment systems for money transfers, 37.9% used EPS to purchase a product, 24.5% used it to pay bills while 32.1% used EPS to pay for a service. This means that respondents use different forms of EPS for different range of activities. It also means that apart from the use of electronic payment

systems for money transfer, the patronage of electronic payment system by respondents is below average.

Availability and User-friendliness of Electronic Payment Systems

The study sought to investigate the availability and user friendliness of electronic payment systems in Nzema East Municipality. A list of statements in relation to user friendliness of electronic payment systems was presented to respondents to express their level of agreement or disagreement with these statements. Table 6 indicates the level of agreement or disagreement with the user friendliness of electronic payment systems as experienced by respondents.

Table 6: Respondents agreement with statements in relation to user-friendliness of electronic payment systems

Statement	SA 2	A 1	I 0	D -1	SD -2	Mean Score X -0.04
I thought the system was easy to use	43	135	43	128	18	0.15
I think I would need the support of a technical person to be able to use this system	77	102	50	70	81	0.06
I think using EPS is cheaper than traditional payment	41	93	43	125	78	-0.32
I would imagine that most people would learn to use this system very quickly	53	78	56	101	92	-0.51
I am satisfied with EPS	55	80	117	79	49	0.03
I think I would like to use this system again	48	98	102	97	35	0.07
I would recommend EPS to others to use	76	102	89	65	48	0.24

Source: Boakye-Marfo (2018)

According to Table 6, respondents slightly believe that electronic payment systems are easy to use with a mean score of 0.15. With a mean score of 0.07 respondents would like to use electronic systems again while the statement 'I think I would need the support of a technical person to be able to use this system' received an agreement with a mean score of 0.06. Nonetheless, respondents did not agree with the statement that EPS is cheaper than traditional payment systems with a mean score of -0.32. Respondents also did not agree with the statement that EPS could be learned quickly by others. This is demonstrated with a mean score of -0.51. Again, respondents are generally satisfied with EPS with a mean score of 0.03 and would like to recommend EPS to others to use with an agreement mean score of 0.24. In a nutshell, electronic payment system at Nzema East Municipality is rated by respondents as not user friendly with an average mean score of -0.04. Similar to the findings of Issaka (2015), the less user-friendly an electronic payment system, the more it affects service delivery negatively hence decreasing patronage.

The study also sought to find out the availability of electronic payment systems at the municipality. The responses of respondents are presented in the Table 7.

Table 7: Respondents agreement with availability of electronic payment systems for transactions

Statement	SA 2	A 1	I 0	D -1	SD -2	Mean Score X -0.39
Point of sale devices can be easily identified at vintage areas	8	33	90	162	87	-0.76
EPS are always in good condition	1	12	71	172	124	-1.07
EPS can be used at all times	78	130	59	65	48	0.33
There are EPS designated for the physically challenged in the society (including the disabled and aged)	18	12	78	150	122	-0.71
There are no network or internet challenges	59	126	95	58	42	0.27

Source: Boakye-Marfo (2018)

The findings of the study revealed that respondents only agreed to statements such as ‘EPS can be used at all times’ and ‘there are no network or internet challenges’ with means scores of 0.33 and 0.27 respectively. However, respondents largely did not agree to all the other statements. For instance, respondents disagreed to the statement that ‘Point of sale devices can be easily identified at vintage areas’ with a mean score of -0.76 whereas they also disagreed with the statement ‘there are EPS designated for the physically challenged in the society (including the disabled and aged)’ with a mean score of -0.71. The statement that EPS are always in good condition was also disagreed by respondents with a means score of -1.07. This is reflected in the average means score of -0.36 which means that electronic payment systems are not always

readily available for use by respondents. As observed by Wahab (2012), the adoption and use of the e-zwich was low mainly due to inadequate availability of point of sale terminals at shopping points among others. Therefore, none availability of electronic payment devices is likely to affect patronage of the system.

Table 8: Factors that affects user accessibility of electronic payment systems

Statement	SA 2	A 1	I 0	D -1	SD -2	Mean Score X 0.94
Consumers' wealth/income	43	83	63	94	97	-0.31
Availability of payment system	121	191	50	12	5	1.08
Consumers' level of education	95	204	32	37	12	0.88
Risk factors (security, safety, ease)	115	124	77	44	20	0.91
Transaction-specific factor	120	161	51	33	15	0.89
Convenience	178	109	44	33	16	1.05
Marketing Campaigns	52	117	137	46	28	0.31
Reliability	68	200	92	19	3	0.82

Source: Boakye-Marfo (2018)

According to the table the number one factor that affects user accessibility of electronic payment systems is the availability of the payment system with the highest means score of 1.08. Convenience was also identified as a major factor considered by respondents whenever they wanted to access an electronic payment system. This is demonstrated by the high mean score of 1.05 followed by risk factors with mean score of 0.91. Transaction specific factors and reliability were

also seen as major factors by respondents with mean scores of 0.89 and 0.82 respectively. Consumers' level of education was also considered to be one of the factors respondents that affect user accessibility of EPS with a mean score of 0.88 as identified by Annon, (1999) that the technicalities involved in some electronic payment transactions discourage less educated customers to patronize its use. Interestingly, marketing campaigns and consumer's wealth or income were the least considered factors by respondents with low means scores of 0.31 and -0.31 respectively. This finding is in sharp contrast with Kennickell and Kwast (1997) research, which found that wealth, has an important role to play in terms of consumer's decisions on payment choice.

Assessing Problems that Hinder User Accessibility of Electronic Payment System

The study sought to find out from respondents some challenges that hinder user accessibility of electronic payment systems. The study first asked respondents whether or not they have had any bad experience using existing electronic payment methods. It was realised from the table below that 69.2% of the respondents had had one bad experience or the other by using the existing electronic payment systems in the municipality whiles 30.8% of them responded that negative to whether they have had any bad experience using existing systems.

Table 9: Whether Respondents have had bad Experience using existing electronic payment methods

	Frequency	Percentage
Yes	263	69.2
No	117	30.8
Total	380	100.0

Source: Boakye-Marfo (2018)

Respondents were further requested to indicate their level of agreement with some challenges that hinder electronic payment systems. The study revealed that high cost of electronic payment transactions was identified by respondents as the biggest challenge that hinder EPS accessibility with a high mean score of 0.87. This finding agrees with that found at a session held by KPMG at the 2016 Ghana Economic Forum (GEF), which noted that customers in Ghana are not happy about the cost of electronic payment transactions as compared to other African markets such as Nigeria and Kenya. This was followed by lack of knowledge and skills in basic computing with a means score of 0.84 while inadequate point of sale terminals and preference for cash/paper payments followed in that order with mean scores of 0.75 and 0.68 respectively. This findings agree with that of Antwi et al., (2015) which found that the adoption and use of the e-zwich was low mainly due to the inadequate availability of point of sale terminals at shopping points among others. Inadequate marketing campaign was also identified as one of the problems of electronic payment systems by respondents with a mean score of 0.44. However, respondents disagreed with poor attitude to new products and services and lack of effective security framework as

challenges that affect electronic payment systems user accessibility. The average mean score of 0.49 shows that respondent sees the list of challenges as very key in accessing electronic payment systems.

Table 10: Challenges that Hinder User Accessibility of Electronic Payment System

Statement	SA 2	A 1	I 0	D -1	SD -2	Mean Score X 0.38
Lack of knowledge and skills in basic computing	98	202	21	40	19	0.84
Lack of effective security framework	43	68	43	128	98	-0.45
Complex procedures for conducting payments	77	172	26	80	25	0.52
Preference for cash/paper payments	54	160	90	51	25	0.68
High cost of electronic payment transactions	88	101	85	56	50	0.32
Inadequate point of sale terminals	91	188	37	44	20	0.75
Inadequate marketing campaigns/ advertisements	48	70	68	106	88	0.44
Poor attitude to new products and services	43	54	44	135	104	-0.53

Source: Boakye-Marfo (2018)

Table 11: Whether Respondents have had bad Experience using existing electronic payment methods

	Frequency	Percentage
Yes	139	69.5
No	61	30.5
Total	200	200

Source: Boakye-Marfo (2018)

Notwithstanding the findings that over 69% of the respondents have had one bad experience or the other with electronic payment systems, 85.5% of them would consider using electronic payment methods again as compared to only 14.5% that responded that they would not consider using electronic payment systems for transactions as indicated in the Table 12.

Table 12: Whether respondents would consider using electronic payment methods again

	Frequency	Percentage
Yes	171	85.5
No	29	14.5
Total	200	100

Source: Boakye-Marfo (2018)

Suggestions on Effective ways of Addressing Problems Associated with User Accessibility of Electronic Payment Systems

The study sought to suggest effective ways of addressing challenges associated with user accessibility of electronic payment systems to ensure maximum patronage by respondents. A list of suggestions were posed to

respondents for them to express their level of agreement with these suggestions as to whether they can address the problems they face with accessing EPS. The results of the findings are presented in Table 9.

Table 13: Suggestions on effective ways of addressing EPS user accessibility

	SA	A	I	D	SD	Mean Score X
Statement	2	1	0	-1	-2	1.13
Improve system security	98	86	10	4	2	1.37
Reduce fees/costs on transaction	158	38	4	0	0	1.77
Simplify the electronic payment process	111	78	9	1	1	1.49
Provide point of sale devices	68	90	30	8	4	1.20
Intensify marketing campaigns/ create awareness on EPS available	59	98	28	10	5	0.98

Source: Boakye-Marfo (2018)

The results of the study revealed that reducing fees or cost on transaction was one sure way of improving user accessibility to respondents. This was demonstrated by a mean score of 1.77, followed by simplifying the electronic payment process to improve on its user friendliness with a mean score of 1.23. Improving system security was also identified as one of the ways of improving user accessibility by respondents with a means score of 0.31 whereas providing point of sale devices and intensifying marketing campaigns or creating awareness on available EPS were among the suggested effective ways of addressing challenges associated with user accessibility of EPS with mean scores of 1.20 and 0.51 respectively. Intensifying marketing campaigns implies that the marketing

activities employed by financial institutions should aid utilisation by educating consumers as to the benefits, ease of use, convenience, and security of paying bills electronically (Mantel, 2000). A high average mean score of 0.75 was attained demonstrating respondents agreement with the suggested effective ways of addressing problems associated with EPS usage.

Aside the above mentioned suggestions, respondents also suggested that conscious effort should be made by state authorities to discourage as much as possible the usage of traditional systems of making payments or transacting businesses. This will ensure that those that are not well vest with the new system will have no option than to patronize the EPS which will inure to their own good. In addition, some respondents suggested that mobile phones should lead the way in revolutionalising EP system. This they claim is as a result of the fact that mobile phones are one of the devices that are in abundance in the system hence its usage in patronising electronic payments will not bring additional capital cost to users. Respondents also stressed that operators of EP systems should intensify training of users and also introduce or improve on using Interactive Voice Response Technology (IVRT) to ensure user friendliness of the system to the less educated.

In addition, some respondents believe that the GoG and the BoG will need to focus on improving the enforcement of regulation and improving collaboration between government and industry. For instance, the BoG has issued a number of directives related to payments and e-money issuers, yet most industry observers believe that a lack of enforcement is reducing the impact of these new rules.

There is also the need for regulators to increase the levels of consultation prior to the introduction of new regulations to ensure easy acceptance by stakeholders.

Summary Chapter

The chapter presents analysis of data gathered from respondents based on the objectives of the study. First of all, the chapter presents analysis on the socio-demographic characteristics of respondents which included age, gender, educational background, employment status, and monthly income brackets of respondents. Also, it presents analysis of data on the forms of electronic payment systems available in the Nzema East Municipality. It further discusses the extent of patronage of electronic payment systems and the availability and user friendliness of electronic payment systems in the municipality. Again, the chapter presents analysis of problems that hinder user accessibility of electronic payment systems and suggest effective ways of addressing problems associated with user accessibility of e-payment systems in the Nzema East Municipality.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Introduction

This chapter contains the summary of the findings, conclusion and recommendations based on the research questions and objectives for the study. In an attempt to answer the research questions to achieve the set research objectives that seeks to address the research problem, both qualitative and quantitative data analysis techniques were employed and the findings below were obtained.

Summary of Findings

The study sought to examine electronic payment systems; user accessibility and problems in the Nzema East Municipality. Specifically, the study sought to identify the forms of electronic payment systems used in Nzema East Municipality; investigate the extent of patronage of electronic payment systems available in Nzema East Municipality; investigate the availability and user friendliness of electronic payment systems in Nzema East Municipality and assess problems that hinder user accessibility of electronic payment system in Nzema East Municipality. In all three hundred and eighty (380) respondents were selected from individuals and business owners in the municipality. Convenience sampling technique was adopted by the study to ensure ease in questionnaire distribution and completion. The sample size was calculated using the Qualtrics sample size calculator.

The study found out that 59.2% of the respondents were males whereas 40.8% of them were females. It also found out that 70.3% of the respondents were

35 years old or less than 35 years. Only, 19% of the respondents had no formal education as compared to 32.4% that had secondary, Vocational or Technical education and 22.1% having tertiary education. The study showed that 69.2% of the respondents were employed whereas 30.8% were unemployed. Out of the 380 respondents, 45.3% of them earned at least GH¢400 each month.

The study revealed that mobile money is the most popular electronic payment system in the Nzema East Municipality with 96.6% of the respondents having used it for one transaction or the other while only 0.5% had used digitised E-Cash system and electronic cheques. This also makes digitised E-Cash system and electronic cheques the least popular EPS in the municipality. The findings of the study showed that 86.1% of the respondents used electronic payment systems for money transfers whereas 37.9% used EPS to purchase products.

The study realized that the knowledge of respondents on the availability of electronic payment system in the municipality was quite high as 47.9% of them knew about the existence of at least one EPS. Also, it found out that most of the known forms of electronic payment systems are available in Nzema East Municipality. However, mobile money transfer/payment is the most popular electronic payment system in the municipality with 100% of the respondents knowing about its availability. Digitised E-Cash system was regarded as the least available electronic payment system in the municipality.

The results of the study showed that mobile money payment system was the most patronized and most regularly used electronic payment system in the

municipality. With the exception of ATM card that had more than 53.2% of the respondents using it, all the others were below average when it come to their patronage regularity of use in the municipality. Again, the study showed that respondents usually use electronic payment systems to do money transfer while less than 25% of them use it for payment of bills.

The study found out that respondents believe that electronic payment systems in the municipality are generally not user friendly with a mean score of - 0.04. Also, it showed that respondents do not believe that electronic payment systems for transactions are readily available in the Nzema East Municipality. They strongly disagreed with statements that 'point of sale devices can be easily identified at vintage areas', 'EPS are always in good condition' and that 'there are EPS designated for the physically challenged in the society'. This means that the non availability of electronic payment devices is likely to affect the effective patronage of EPS in the municipality. Again, availability of payment systems and convenience were identified as the most influential factors that determine people's accessibility of EPS in the municipality.

The study identified many challenges that affect user accessibility of EPS in the Nzema East Municipality. In fact, 69.2% of the respondents have had one bad experience by using one electronic payment system or the other. Among the list of challenges, lack of knowledge and skills in basic computing and inadequate point of sale terminals were identified as the biggest challenges of respondents as far as E-payment systems are concerned. Notwithstanding these challenges,

85.5% of the respondents were willing to use electronic payment systems again to transact activities

The study suggested effective ways of addressing challenges associated with user accessibility of electronic payment systems to ensure maximum patronage by respondents. Reducing fees or cost on transaction received the highest mean score of 1.27 followed by simplifying the electronic payment process to improve on its user friendliness with a mean score of 1.23. Improving system security and intensifying marketing campaigns or creating awareness on available EPS were among the suggested effective ways of addressing challenges associated with user accessibility of EPS with mean scores of 0.31 and 0.51 respectively.

The study also suggested that conscious effort should be made by state authorities to discourage as much as possible the usage of traditional systems of making payments or transacting businesses. It was also suggested that mobile phone systems should lead the way in revolutionise electronic payment systems in the municipalities.

Again, it was suggested that operators of EP systems should intensify training of users and also introduce or improve on using Interactive Voice Response Technology (IVRT) to ensure user friendliness of the system to the less educated.

Finally, the study suggested that the Government of Ghana (GoG) and the Bank of Ghana (BoG) will need to focus on improving the enforcement of

regulation and improving collaboration between government and industry to ensure that stakeholders implement regulations effectively.

Conclusion

The study sought to examine electronic payment systems; user accessibility and problems in the Nzema East Municipality. Specifically, the study sought to identify the forms of electronic payment systems used in Nzema East Municipality; investigate the extent of patronage of electronic payment systems available in Nzema East Municipality; investigate the availability and user friendliness of electronic payment systems in Nzema East Municipality and assess problems that hinder user accessibility of electronic payment system in Nzema East Municipality. In all, 380 respondents were selected from individuals and business owners in the municipality. Convenience sampling technique was adopted by the study to ensure ease in questionnaire distribution and completion. Based on the findings of the study, it can be concluded that mobile money is the most popular and most patronised electronic payment system in Nzema East municipality. Again, the study concludes that electronic payment systems in the Nzema East Municipality are not user friendly. It also concludes that availability of payment systems and convenience are the most influential factors that determine people's accessibility of EPS in the municipality. Also, it can be concluded from the study that lack of knowledge and skills in basic computing and inadequate point of sale terminals are the biggest challenges that affect user accessibility of electronic payment in the municipality. Moreover, provision of point of sale devices, simplification of electronic payment process, improving

security and reduction of cost on transactions can improve user accessibility of electronic payment systems. Finally, the study recommends that mobile money should lead the revolutionisation of electronic payment systems amidst enforcement of regulations by regulatory bodies to ensure maximum accessibility and patronage.

Recommendations

Based on the empirical and data analysis of this study, the researcher makes the following recommendations;

- The study recommends that mobile money transfer or payments should be the gate way to maximizing accessibility and patronage of electronic payment systems in the country. More, mobile payment systems should be built and introduce to attract all and sundry in using electronic payment systems for transactions.
- The inherent risks and lack of trust in electronic payments discourage consumers from using the system for transactions. There is the need for banks and other service providers to educate consumers about all of their payment system options and the pro and cons of each. Consumers will need to be informed about the potential liability for the use of new types of electronic payment systems, so they can understand how it differs from cash. This will make them well-informed and choose payment options that will bring maximum value to them.
- The study recommends that the cost of electronic payment systems such as mobile money should be reviewed downward and if possible made free.

This will make it more attractive for people and businesses and use it for bigger transactions.

- The study recommends that EPS should be made user friendly without compromising security. This can be achieved by introducing Interactive Voice Recognition Technology and implementing security regulations put in place by regulators.
- Finally, the study recommends that further study should be conducted on the how mobile money can be used to improve electronic payment patronage in the Ghanaian economy.

REFERENCE

- Abor, J. (2005). Technological innovations and banking in Ghana: An evaluation of customers' perceptions. *IFE Psychologia: An International Journal*, 13(1), 170–187. <https://doi.org/10.4314/ifep.v13i1.23668>
- Africa Development Bank. (2012). Financial inclusion and integration through mobile payments and transfer. *Proceedings of Workshops on “Enhancing Financial Integration Through Sound Regulation of Cross-Border Mobile Payments: Opportunities and Challenges.”*
- Agimo. (2004). Knowledge management - Better Practice Checklist. *Studies in Health Technology and Informatics*, 160, 1–12. Retrieved from www.agimo.gov.br/checklilst%5Cnhttp://www.finance.gov.au/agimo-archive/better-practice-checklists/docs/BPC13.pdf
- Agyeiwaah, E., Gloria Afua Serwaah Anane, Appiah, K. O., & Opoku-Ware, J. (2014). Challenges of E-Zwich at Ghana Commercial Bank: do the views of users differ to those of non-users? *African Journal of Hospitality, Tourism and Leisure*, 3(2), 1–12.
- Aigbe, P., & Akpojaro, J. (2014). Analysis of Security Issues in Electronic Payment Systems. *International Journal of Computer Application*. <https://doi.org/10.5120/18946-9993>
- Alam, S. S., Ali, Y., & Jani, M. F. M. (2011). An Empirical Study of Factors Affecting Electronic Commerce Adoption among SMEs in Malaysia. *Journal of Business Economics and Management*, 12(2), 375. <https://doi.org/10.3846/16111699.2011.576749>

- Antwi, S. K., Hamza, K., & Bavoh, S. W. (2015). Examining the Effectiveness of Electronic Payment System in Ghana: The Case of e-ZWICH in the Tamale Metropolis. *Research Journal of Finance and Accounting*, 6(2), 163–177. Retrieved from <http://iiste.org/Journals/index.php/RJFA/article/view/19190>
- Atroshi, I., Gummesson, C., Johnsson, R., Ornstein, E., & Rosén, I. (2000). Median nerve latency measurement agreement between portable and conventional methods. *Journal of Hand Surgery (British and European Volume)*, 25(1), 73–77. <https://doi.org/10.1054/jhsb.1999.0316>
- Bank of Ghana. (2017). PAYMENT SYSTEMS DEPARTMENT BANK OF GHANA PAYMENT SYSTEMS OVERSIGHT ANNUAL REPORT, 2017. *Payment Report*. Retrieved from [https://www.bog.gov.gh/privatecontent/Payment Systems/Payment Systems Annual Report 2017.pdf](https://www.bog.gov.gh/privatecontent/Payment%20Systems/Payment%20Systems%20Annual%20Report%202017.pdf)
- Beaumont, J. F., Bocci, C., & Haziza, D. (2014). An adaptive data collection procedure for call prioritization. *Journal of Official Statistics*, 30(4), 607–621. <https://doi.org/10.2478/JOS-2014-0040>
- Bezhovski, Z. (2016). The Future of the Mobile Payment as Electronic Payment System. *European Journal of Business and Management*, 8(8), 2222–2839.
- Denscombe, M. (2010). The good research guide for small-scale social research projects. *Psychological Science*, 4th editio, 356.
- Dawson, C. (2002). Practical Research Methods. *Annals of Physics*, 54, 169. <https://doi.org/10.1017/CBO9781107415324.004>.

- Fishbein, M., & Ajzen, I. (1975). *Sindex.Pdf. Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. <https://doi.org/10.2307/2065853>
- Goodhue, D. L., & Thompson, R. L. (1995). Task-Technology Fit and Individual Performance. *MIS Quarterly*. <https://doi.org/10.2307/249689>
- Guru, B. K., Vaithilingam, S., Ismail, N., & Prasad, R. (2000). Electronic banking in Malaysia: a note on evolution of services and consumer reactions. *Journal of Internet Banking and Commerce*, 5(1), 234–256. <https://doi.org/10.1007/978-3-322-86627-1>
- Haruna, I. (2012). Challenges of Electronic Payment Systems in Ghana: The Case of e-ZWICH. *American Journal of Business and Management*, 1(3), 87–95. <https://doi.org/10.11634/216796061504131>
- Huang, X., Dai, X., Singh, E., & Huang, W. (2015). Evaluating a micro-payment system for mobile electronic commerce. In *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* (Vol. 9320, pp. 87–92). https://doi.org/10.1007/978-3-319-24132-6_11
- Janesick, V. (1994). The dance of qualitative research design: Metaphor, methodolatry, and meaning. *Handbook of Qualitative Research*, (April), 209–219. <https://doi.org/10.1017/CBO9781107415324.004>.

- Kabir, M. A., Saidin, S. Z., & Ahmi, A. (2015). Adoption of e-Payment Systems: A Review of Literature. In *Proceedings of the International Conference on E-Commerce ICoEC2015 20-22 October 2015, Kuching, Sarawak, Malaysia*. <https://doi.org/10.1200/JCO.2007.14.9336>
- Kalakota, R., Stallaert, J., & Whinston, A. (1996). Worldwide real-time decision support systems for electronic commerce applications. *Journal of Organizational Computing and Electronic Commerce*, 6(1), 11–32. Retrieved from <http://search.epnet.com/login.aspx?direct=true&db=buh&an=7566730>
- Kaur, G., Sharma, R. D., & Mahajan, N. (2012). Exploring customer switching intentions through relationship marketing paradigm. *International Journal of Bank Marketing*, 30(4), 280–302. <https://doi.org/10.1108/02652321211236914>
- Kim, C., Mirusmonov, M., & Lee, I. (2010). An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behavior*, 26(3), 310–322. <https://doi.org/10.1016/j.chb.2009.10.013>
- Kim, C., Tao, W., Shin, N., & Kim, K. S. (2010). An empirical study of customers' perceptions of security and trust in e-payment systems. *Electronic Commerce Research and Applications*. <https://doi.org/10.1016/j.elerap.2009.04.014>
- Knight, S. A., & Cross, D. (2012). Using contextual constructs model to frame doctoral research methodology. *International Journal of Doctoral Studies*, 7, 39–62.

- Mackie-Mason, J. K., & White, K. (1997). Evaluating and Selecting Digital Payment Mechanisms. *Interconnection and the Internet*, (November), 113–134. Retrieved from <http://ssrn.com/abstract=980782>
- Mcdougall, G. H. g., & Levesque, T. (2000). Customer satisfaction with services: putting perceived value into the equation. *Journal of Services Marketing*. <https://doi.org/10.1108/08876040010340937>
- Nuthan, K., Nagarathna, B. M., Sumana Nayaka, R. L., & Vidya Rathna, B. (2015). An Automated Teller Machine : Literature Review. *International Journal of Novel Research in Computer Science and Software Engineering*, 2(1), 43–45.
- Odior, E. S. (2012). Cashless Banking in Nigeria : Challenges , Benefits and Policy Implications. *European Scientific Journal June*.
- Omotunde, M., Sunday, T., & John-Dewole, A. T. (2013). Impact of Cashless Economy in Nigeria. *Greener Journal of Internet, Information and Communication Systems*. <https://doi.org/10.15580/GJIICS.2013.2.020713436>
- Parasuraman, A., & Colby, C. (2002). Techno-ready marketing: How and why your customers adopt technology. *Journal of Consumer Marketing*. <https://doi.org/10.1108/jcm.2002.19.4.359.1>
- Qifeng, Y., Zhengwei, C., & Ping, S. (2007). Research on online payment mode based on internet banking payment gateway. In *2007 International Conference on Convergence Information Technology, ICCIT 2007*. <https://doi.org/10.1109/ICCIT.2007.4420554>.

- Rachna, & Singh, P. (2013). Issues and Challenges of Electronic Payment Systems. *International Journal for Research in Management and Pharmacy*, 2(9), 25–30. Retrieved from http://raijmr.com/wp-content/uploads/2014/02/3_25-30-Rachna-et-al..pdf
- Read, R. J. (1989). EFTPOs: electronic funds transfer at point of sale. *Electronics Communication Engineering Journal*, 1(6), 263–270. <https://doi.org/10.1049/ecej:19890057>
- Rogers, E. M. (1995). *Diffusion of Innovations, Fourth Edition. Elements of Diffusion*. <https://doi.org/citeulike-article-id:126680>
- Roy, S. (2015). *Overview of electronic payment system: A special reference to India. Handbook of Research on Cultural and Economic Impacts of the Information Society* (Vol. 1). <https://doi.org/10.4018/978-1-4666-8598-7.ch017>
- Sample Size Calculator. (2017). Sample Size Calculator by Raosoft, Inc. *Sample Size*.
- Saputra, D. E., Azhari, F., Engel, V. J. L., Nugraha, I. G. B. B., & Supangkat, S. H. (2013). Integrated payment system for micro payment. In *Proceedings - International Conference on ICT for Smart Society 2013: "Think Ecosystem Act Convergence"*, ICISS 2013 (pp. 218–221). <https://doi.org/10.1109/ICTSS.2013.6588093>
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students*. (Pearson Education Limited, Ed.) (5th ed.). Essex, England.

- Stanley, T. L. (2008). Credit Cards. *Brandweek*, 49(17), SR12-SR12. Retrieved from <http://0-search.ebscohost.com.wam.city.ac.uk/login.aspx?direct=true&db=a9h&AN=31875817&site=ehost-live>
- Stroebe, M. S., Hansson, R. O., Stroebe, W., & Schut, H. (2002). Handbook of Bereavement Research: Consequences, Coping and Care: Book review. *Journal of Social & Personal Relationships*, 19(5), 724–725. <https://doi.org/10.1037/10436-000>
- Yin, R. K. (2003). Case study methodology R.K. Yin (2003, 3rd edition). Case Study Research design and methods. Sage, Thousand Oaks (CA).pdf. In *Case Study Research: design and methods* (pp. 19-39; 96-106).
- Yu, H.-C., Hsi, K.-H., & Kuo, P.-J. (2002). Electronic payment systems: an analysis and comparison of types. *Technology in Society*, 24(3), 331–347. [https://doi.org/10.1016/S0160-791X\(02\)00012-X](https://doi.org/10.1016/S0160-791X(02)00012-X)

APPENDICES

QUESTIONNAIRE

Dear respondent, I am a student of the University of Cape Coast and am conducting a research on the “**ELECTRONIC PAYMENT SYSTEMS; USER ACCESSIBILITY AND PROBLEMS, A CASE STUDY OF NZEMA EAST MUNICIPALITY.**” The research is in partial fulfillment of the requirement for the award of Master Degree in Business Administration. The respondent is assured that all information provided will be treated as confidential. Further the research will be carried out to meet the highest ethical standards. (Please tick (√) in the box where appropriate)

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS RESPONDENTS

1. Gender: Male [] Female []
2. Age: 18-25 [] 26-35 [] 36-45 [] 46-55 []
56 years and above []
3. Level of education
Basic/MSLC [] Sec/Voc/Tech [] HND/Degree []
Post-Graduate [] No formal education []
4. Level of employment
Employed (Part time or self-employed) [] Unemployed []
5. If employed, indicate your monthly income brackets
Less than GH¢ 200 [] From GH¢ 200 - 400 [] From GH¢
401 - 600 [] More than GH¢ 600 []

SECTION B: Types of Electronic Payment Systems in NZEMA EAST MUNICIPALITY

6. In the list below, indicate the type(s) of Electronic Payment Systems that you know exist in the Nzema East Municipality by ticking the appropriate box where it applies.
ATM []
Point of Sale Devices (e.g. E-Zwich) []

- Online/ Internet Payment []
- Mobile Money Transfer/Payment []
- Plastic Cards (Credit cards, Debit cards and Smart cards) []
- Electronic Cheque []
- Digitised E-Cash systems []
- Telephone Banking []

SECTION C: The extent of patronage of electronic payment systems in

Nzema East Municipality

7. In the list below, indicate the type(s) of Electronic Payment Systems that you have used for transactions by ticking the appropriate box where it applies.

L/N	Payment System	Used	Not Used
a.	ATM Card		
b.	Point of Sale Devices (e.g. E-Zwich)		
c.	Online/ Internet Payment		
d.	Mobile Money Transfer/Payment		
e.	Plastic Cards (Credit cards, Debit cards and Smart cards)		
f.	Electronic Cheque		
g.	Digitised E-Cash systems		
h.	Telephone Banking		

8. Indicate the extent to which you use any of the following type(s) of Electronic Payment Systems for transactions by ticking the appropriate box where it applies. **Very often (3), Often (2), Not Often (1).**

L/N	Payment System	Very Often	Often	Not Often
a.	ATM Card			
b.	Point of Sale Devices (e.g. E-Zwich)			
c.	Online/ Internet Payment			
d.	Mobile Money Transfer/Payment			
e.	Plastic Cards (Credit cards, Debit cards and Smart cards)			
f.	Electronic Cheque			
g.	Digitised E-Cash systems			
h.	Telephone Banking			

9. What did you use the electronic payment system above for?

Purchase a product []

Pay for a service []

Pay bills []

Others (Please specify)

SECTION D: Availability and user-friendliness of electronic payment systems in Nzema East Municipality

10. Indicate the extent to which you agree with the following statement in relation to the user-friendliness of electronic payment systems for transactions in Nzema East Municipality. Kindly indicate the extent of your agreement by ticking the appropriate box. **SA: Strongly Agree; A: Agree; U: Undecided; D: Disagree; SD: Strongly Disagree.**

L/N	Statement	SA	A	U	D	SD
a.	I thought the system was easy to use					
b.	I think I would need the support of a technical person to be able to use this system					
c.	I think using EPS is cheaper than					

	traditional payment					
d.	I would imagine that most people would learn to use this system very quickly					
e.	I am satisfied with EPS					
f.	I think I would like to use this system again					
g.	I would recommend EPS to others to use					

11. Indicate the extent to which you agree with the following factors in relation to the availability of electronic payment systems (EPS) for transactions at Nzema East Municipality. Kindly indicate the extent of your agreement by ticking the appropriate box. **SA: Strongly Agree; A: Agree; U: Undecided; D: Disagree; SD: Strongly Disagree**

L/N	Statement	SA	A	U	D	SD
1.	Point of sale devices can be easily identified at vintage areas					
2.	EPS are always in good condition					
3.	EPS can be used at all times					
4.	There are EPS designated for the physically challenged in the society (including the disabled and aged)					
5.	There are no network or internet challenges					

12. Indicate the extent to which you agree with the following factors that affect user accessibility of electronic payment systems for transactions. Kindly indicate the extent of your agreement by ticking the appropriate

box. **SA: Strongly Agree; A: Agree; U: Undecided; D: Disagree; SD: Strongly Disagree**

L/N	Statement	SA	A	U	D	SD
h.	Consumers' wealth/income					
i.	Availability of payment system					
j.	Consumers' level of education					
k.	Risk factors (security, safety, ease)					
l.	Transaction-specific factor					
m.	Convenience					
n.	Marketing Campaigns					
o.	Reliability					

SECTION E: Challenges involved in the use of Electronic Payment System

13. Kindly indicate the extent to which you agree with the following statements regarding the challenges involving user accessibility of electronic payment system in Nzema East Municipality. **SA: Strongly Agree; A: Agree; U: Undecided; D: Disagree; SD: Strongly Disagree**

L/N	Statement	SA	A	U	D	SD
a.	Lack of knowledge and skills in basic computing					
b.	Lack of effective security framework					
c.	Complex procedures for conducting payments					
d.	Preference for cash/paper payments					
e.	Link failure and/ or slowness of transaction					
f.	Inadequate point of sale terminals					
g.	Inadequate marketing campaigns/ advertisements					
h.	Poor attitude to new products and services					

14. Have you had any bad experience using existing electronic payment methods?

Yes [] No []

SECTION F: SUGGESTION ON EFFECTIVE WAYS OF ADDRESSING CHALLENGES ASSOCIATED WITH USER ACCESSIBILITY OF ELECTRONIC PAYMENT SYSTEMS

15. Kindly indicate the extent to which you agree with the following statements regarding the effective ways of addressing challenges associated with user accessibility of electronic payment systems. **SA: Strongly Agree; A: Agree; U: Undecided; D: Disagree; SD: Strongly Disagree**

L/N	Statement	SA	A	U	D	SD
a.	Improve system security					
b.	Reduce fees/costs on transaction					
c.	Simplify the electronic payment process					
d.	Provide point of sale devices					
e.	Intensify marketing campaigns/ create awareness on EPS available					

15. How can electronic payment systems user accessibility be improved?

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