ASSESSING THE IMPLEMENTATION OF THE ELECTRONIC SALARY PAYMENT VOUCHER OF THE CONTROLLER AND ACCOUNTANT GENERAL DEPARTMENT: A CASE STUDY OF GHANA EDUCATION SERVICE (GES)

BY

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DECLARATION

I hereby declare that this submission is my own work towards the Masters of Business Administration (human resource management-option) and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgment has been made in the text.

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DEDICATION

I dedicate this thesis to my beloved son, Wumpini M. Haruna.

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My thesis on the assessment of the Electronic Salary Payment Voucher (E-SPV) at the Ghana Education Service (GES) has been fruitful owing to the affection and concern of several.

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ABSTRACT

The study assesses the implementation of the Electronic Salary Payment Voucher (E-SPV) system of Controller and Accountant General's Department (CAGD) on Ghana Education Service (GES). Little has been done to assess the implementation of E-SPV of the system in Ghana since its adoption again, the resistance of teachers and public sector workers against it, makes this study worth considering. Mixed method research design of quantitative and qualitative was employed using convenience and purposive sampling techniques to select 500 teachers and 6 CAGD staffs respectively. Questionnaires and structured interview guide were used to elicit data from the respondents. Data were gathered from both primary and secondary sources and SPSS and Qualitative Content Analysis (QCA) were used to analyze the primary data gathered. The study revealed that lack of adequate knowledge in the E-SPV system has resulted in the mal-handling of e-pay documents. Moreover, the study concluded that teachers within the educational sectors are faced with avalanche challenges such as lack of equipment like computers and internet services to validate workers' pay on the voucher and access to their pay slip information and due to that, some have to walk long distances to access internet services which increases their security and privacy risks level. The E-SPV system has nevertheless, brought convenience, cost effectiveness and easy access to salary information and validation before payment to teachers. However, CAGD challenges reported were, system malfunctions, internet related issues etc. and their benefits included: system cost effectiveness, prompt and fast access to approved vouchers before payment, etc. The study therefore, recommended that, employees be sensitized constantly on the system, provided with the basic equipment, among others to enable adequate and proper use of the system.

TABLE OF CONTENTS

Title Page ……..i

Declaration..... ii

Dedication iii

Acknowledgements iv

Abstract.....v

Table of Contents vi

List of Tables x

List of Abbreviation & Acronyms xi

CHAPTER ONE:-INTRODUCTION.....1

1.0 Background of the study 1

1.1 Statement of problem 2

1.2.1 General objective 4

1.2.2 Specific objectives 4

1.3. Research questions 4

1.4 Significance of the study.....5

1.5 Brief methodology 5

1.6. Scope of the study.....6

1.7. Outline of study.....6

CHAPTER TWO:-LITERATURE REVIEW 8

2.0 Introduction.....8

2.1 The Concept and Adoption of Electronic Payment System.....9

2.2 Categories of Electronic Payment Systems 14

2.2.1 Electronic cash payment system (e-cash) 15

2.2.2 Electronic Cheque (eCheque) Payment System.....16

2.2.3 Smart Card Payment System.....17

2.2.4 Online Credit Card Electronic Payment System 18

2.3 Electronic Payment System in Africa and Ghana.....20

2.3.1 Popular Electronic Payment Systems in Africa.....26

vii. PocketMoni as an e-transaction device 28

2.4 Challenges of Electronic Payroll Voucher System 28
2.4.1 Fraud risk associated with e-transaction *29*
2.4.2 Money Laundering associated with e-transactions *31*
2.4.3 Privacy and Anonymity associated with e-transactions *31*
2.4.4 Technical problems associated e-transactions *33*
2.4.5 Cultural problems associated with e-transactions *33*
2.5 Benefits of Electronic Payroll Voucher System 34
2.6 Conceptual Framework 36

CHAPTER THREE:-METHODOLOGY AND ORGANIZATIONAL PROFILE 40

3.0 Introduction 40
3.1 Research Design 40
3.2 Population 41
3.3 Sample Size 42
3.3.1. Sampling procedure employed *43*
3.4 Sources of Data 46
3.4.1 Primary Data *46*
3.4.2 Secondary Data *46*
3.4.3 Data Collection Instruments *47*
3.4.4. Questionnaire *47*
3.4.6. Structured interviews *48*
3.5 Data Analysis Techniques 49
3.6. Validity and Reliability of Data 49
3.6.1. Data Validity *49*
3.6.2. Data Reliability *50*
3.7. Ethical Considerations 51
3.8. Brief history, mission and vision of Ghana Education Service (GES) 51
3.8.1 Ghana Education Service Staffing *52*
3.8.2 Main activities carried out by GES *53*
3.8.3 Electronic Salary Payment Voucher (E-SPV) in GES *54*

CHAPTER FOUR:-DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS 56

4.0 Introduction 56

4.1 Demographics of teachers 56

4.2 Mode of salary Payment 59

4.3. Electronic salary information accessibility 60

4.4 Security and privacy of employees' information on E-SPV 61

4.5 Challenges of using E-salary payment voucher system 64

4.6 Ways of addressing challenge (s) 65

4.7 Duration of addressing challenge 66

4.8 Frequency of challenges 67

4.9 Desiring to stop using electronic payment voucher due to the challenges 69

4.10 Benefit of electronic payment system 70

4.11 Relative Important Index (RII) on E-SPV system usage 72

4.12 Relative Important Index (RII) on Security and privacy of employees' information 73

4.13 Frequency of challenges 74

4.14 Benefits of the E-SPV system frequency 75

4.15 Perspective of Validators 77

4.16 Time duration for validating employees' salary information for payment 77

4.17 Validating after the required time 78

4.18 Needing expertise to validate 78

4.19 Place of Validation 79

4.20 Printing document after validation 80

4.21 Place of Printing 80

4.22 Incurring cost in E-SPV validation 81

4.23 Cost bearer 81

4.24 Challenges occurring validating E-SPV system 82

CHAPTER FIVE:-SUMMARYOF FINDINGS, CONCLUSION AND RECOMMENDATIONS 84

5.0 Introduction 84

5.1 Summary of Findings (Perspective of the Teachers) 84

5.1.1 E-payment system salary is receive through *84*
5.1.2 Electronic salary information accessibility *84*
5.1.3 Security and privacy of employees' information on E-SPV *85*
5.1.4 Challenges of using E-salary payment voucher *86*
5.1.5 Frequency of challenges *87*
5.1.6 Benefit of electronic payment system *88*
5.2 Conclusions 90
5.3 Recommendations 92
5.3.1 Sensitization of teachers on E-SPV *92*
5.3.2 Policy formulation *93*
5.3.3 Involvement of teachers *93*
5.3.4 Collaboration of government and service providers *93*
5.3.5 Provision of equipment for teachers *94*

REFERENCE **1**
APPENDICES **6**

LIST OF TABLES

Table 3.1: Population of the regions under study 42
Table 3.2: Tabulation of the sample size in each region 43
Table 3.3 Categories, number of interviews and the sampling techniques employed. 45
Table 4.1: Demographics 58
Table 4.2: E-payment system salary is received through 60
Table 4.3: Electronic salary information accessibility 61
Table 4.4: Security and privacy of employees' information 64
Table 4.5: Challenges of using E-payment voucher 65
Table 4.6: Way of addressing challenge (s) 66
Table 4.7: Duration of addressing challenge 67
Table 4.8: Frequency of challenges 69
Table 4.9: Desiring to stop using electronic payment voucher due to the challenges 70
Table 4.10: Benefit of electronic payment system 72
Table 4.11: RII on Electronic system usage 73
Table 4.12: RII on Security and privacy of employees' information 74
Table 4.13: Frequency of challenges 75
Table 4.15: Kind of E-payment system used to receive salary 77
Table 4.16: Time duration for validating employees' salary information for payment 78
Table 4.17: Validating after the required time 78
Table 4.18: Needing expertise to validate 79
Table 4.19: Place of validation 79
Table 4.20: Printing document after validation 80
Table 4.21: Place of printing 81
Table 4.22: Incurring cost in E-SPVvalidation process 81
Table 4.23: Cost bearer 82
Table 4.24: Challenges occurring in validating E-SPV system 83

LIST OF ABBREVIATION & ACRONYMS

ATM	Automated Teller Machine
CAG	Controller and Accountant General
CAGD	Controller and Accountant General Department
E – ZWICH	Electronic - Zwich
E-BANKING	Electronic Banking
E-CASH	Electronic Cash
E-CHEQUE	Electronic Cheque
EFCC	Economic and Financial Crimes Commission
E-FRAUD	Electronic Fraud
E-FRAUDSTER	Electronic Fraudster
E-FRAUDSTERS	Electronic Fraudsters
E-MONEY	Electronic Money
EP	Electronic Payment
EPS	Electronic Payment System
E-SPV	Electronic Payment Voucher
E-SPVS	Electronic Salary Payment Voucher System
E-TRANSACTION	Electronic Transaction
GCB	Ghana Commercial Bank
GDP	Gross Domestic Production
GES	Ghana Education Service
HR	Human Resource
HRF	Human Resource Function
HRM	Human Resource Management
ICPC	Independent Corrupt Practices and Allied Commission
ICT	Information Communication Technology
IT	Information Technology
KMA	Kumasi Metropolitan Assembly
MDAs	Municipal and District Assemblies
MMDAS	Ministries, Departments and Agencies
MOE	Ministry of Education
MTN	Mobile Telecommunication Network
POS	Point of Sale
PV	Payment Voucher
RTGS	Real Time Gross Settlement
SGB	Societe General Bank
SG-SSB	Social General and Social Security Bank
SME	Small and Medium Enterprise
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
SPV	Salary Payment Voucher
TBL	Trust Bank Limited
TT	Telegraphic Transfer

CHAPTER ONE

INTRODUCTION

1.0 Background of the study

Currently, HR units and businesses see the manual payroll processes or practices as time and resources wasting. Manual payroll processes and employee documents repeatedly are considered imperfect, erroneous, and erratic and cause employees and employers frustration in accessing information throughout the corporation (Berson and Dubov, 2007). Human Resources (HR) demonstrate valued and a strategic role in organizations. Professionals of HR are now investing strategically in automation and finding ways to do more work with the limited resources whiles ensuring effective and efficient accomplishment of firms' objectives. Scarce resources have also allowed human resource managers (HRMs) to focus on both administrative activities relating to individual employees, and developing well-established techniques and plans, to enable the human resource function (HRF) plan and directly aligned its overall business objectives through the adaptation of technology or automation. To help reduce the administrative weight on employees and themselves and advance immediate access to records and ensure productivity increase, HR professional's, governments' and businesses sees a reason to cliff to automated systems. For instance, a Hackett group study in 2004, demonstrated that, 89% respondents would invest in automation as a top strategy without any hesitation.

The focus and outline of the study are on the Electronic Salary Payment Voucher (E-SPV) system of the Controller and Accountant General Department (CAGD) on the Ghana Education Service. The findings also offer valuable insights into the E-SPV benefits of salary computerization as well as the challenges encountered in the study.

1.1 Statement of problem

According to Millar, (2009) essentially, it must be of important for any new technology adopted by any firm to involve and incorporate employees' ideas or views since personal data needs rigorous management and consideration for effective planning and security checks. As organizations are becoming more aware of the vital role in planning, managing, monitoring and paying their members, they frequently restructure to align current trend by adopting new technologies and processes that work effectively and efficiently. These decisions, actions, communications and transactions related to employees however, must be probably kept and safeguarded. Again, any technology implemented, should make sure that it complies with legal security, privacy and employment requirements regardless of whether records are electronic or paper.

Furthermore, the current level of Information Technology (IT) and its related infrastructure and usage should be of much concern in setting up a new system. IBM, (2008) for instance, indicates that many institutions face enormous challenges in handling complex and vast electronic employee information. Subsequently, being abreast with new technology is good but most organizations lack the budget to update it regularly or secure employees personal data and this often limits employees' right to privacy and serious unplanned economic burden (McHardy et al., 2005).

Moreover, a company's growth, the availability of resources and the level of satisfaction or dissatisfaction of the current HR system are very vital to employee payroll automation, else it will lack a concrete plan for execution (Millar, 2009).

Ghanaian public workers have been paid through the manual system since independence. Various governments over the years have tried to improve the mode of

payment with the proposal that, the system is bedeviled with issues of ghost names, people receiving double salaries, people being paid for no work done etc.

In 2014, therefore, the government of Ghana transferred its public workers into an Electronic Salary Payment Voucher (E-SPV) system with the intention of sanitizing the system through the Controller and Accountant General Department (GAGD). The E-SPV is an electronic version of the manual voucher that must be validated electronically within time and firmly through the internet before salaries are remunerated.

However, this new version met resistance from the teachers unions and other public sector workers. For instance, research has revealed that some Ghanaian teachers protested the electronic salary payment system with the view that, it was going to be a counter-productive system that will be abused easily (www.investorwords.com). Though, it is a natural tendency for people to resist change, the push-backs likely to occur, are worth and necessary to consider. Again, HR managers and IT specialist are often seen as the only expects in planning, designing and implementing electronic data and thus disregard or overlook the need to involve the personnel. This opinion often makes it impossible for efficient and effective implementation and result in a misfit for them. Given recognition to personnel contribution and the need for their involvement in the designing process is key, hence the prerequisite for the study.

Furthermore, little has been done to assess the implementation of the electronic salary payment voucher system in Ghana since its adoption. The study therefore, assesses the E-SPV implementation on Ghana Education service (GES) in six (6) Regions, three (3) southern regions comprising Greater Accra, Ashanti and Western Regions

and three (3) Northern Regions thus Upper East, Brong-Ahafo and Northern Regions of Ghana.

1.2 Objectives of the study

1.2.1 General objective

The core objective of this research is to assess the implementation of the Electronic Salary Payment Voucher (E-SPV) system of Controller and Accountant General Department (CAGD) on Ghana Education Service (GES).

1.2.2 Specific objectives

This research specifically seeks to;

i) Identify the electronic salary payment voucher system adopted by the controller and accountant General Department.

ii) Evaluate the challenges of the electronic payment system

iii) Assess the benefits of the electronic salary payment voucher system.

iv) Identify the implementation process of the electronic salary payment system

1.3. Research questions

i) Which electronic payment system has been adopted by the Controller and Accountant General Department?

ii) What are the challenges of the electronic salary payment voucher systems?

iii) What are the benefits of the electronic salary payment voucher systems?

iv) What is the implementation process of the electronic salary payment system?

1.4 Significance of the study

Research on assessing the implementation of the electronic salary payment voucher system is interested in examining the perceptions of this current system on both the employer and the employee and the nation as a whole. It shall also help managers especially employees to understand and evaluate their expectations on the new system and how the validation process is expected to produce the desired outcome.

It educates the public especially employees on the Controller and Accountant General's Department salary payment voucher, on how their personal data is being protected and managed. Employees on this system will get in-depth knowledge about how this current system operates and make necessary adjustment or seek legal amends if possible. The research work will also be useful to the controller and accountant general department who can help evaluate or make changes to the new system as well as exhume the challenges and benefits of the electronic salary payment voucher system to employees, government and the nation at large. It will be useful also to researchers or readers who desire to carry on further and or similar study on the topic.

1.5 Brief methodology

The research adopted the descriptive survey method approach which allowed for the collection of qualitative and quantitative data. Data was collected through structured interviews of conveniently selected teachers who were available at post and willing to answer research questions and purposively selected CAGD staff who gave relevant and useful information necessary for the study. Based on the objectives of the study, data from questionnaires were analyzed using and statistical package for social sciences (SPSS) while content analysis was employed in the structured interview conducted on the CAGD. Secondary data or already existed documents were also

content analyzed based on the objectives of the research to complement the primary data. Accordingly, the key themes which emerged from the literature analysis were employed as basis for the design of the questionnaires which sought to unearth the type of Electronic Payment System (EPS) adopted by CAGD, the challenges and the benefits of EPS. The study subsequently involved a survey of randomly selected regions (Greater Accra, Ashanti, western, Brong-Ahafo, Northern and Upper East) in which the research was conducted to get the primary data. This was done to give a fair opportunity to regions both in the southern and northern sector an equal chance of being selected for the study. Also, this approach gives the study the opportunity to generalize findings on the E-SPV system on GES in the entire nation. Therefore, the emerged sample size used for the data collection was 506 and comprised 6 CAGD departmental heads of the public sector and 500 GES employees.

1.6. Scope of the study

The study places attention in assessing the implementation of the E-SPV on employees in the Ghana education service. Given the limited time for the research, the study will focus only on Ghana education service in three southern regions (Greater Accra, Ashanti and Western) and three northern regions (Northern, Brong-Ahafo and Upper East) and the CAGD of Ghana.

1.7. Outline of study

The study is organized into five chapters. The first chapter is made up of the background, problem statement, objectives of the study, the significance of the study, brief methodology, the scope of the study, as well as the outline of the research. Chapter Two is the literature review that reports on the study context of EPS. It also explained the theoretical opinions on EPS; the concepts and definition of EPS; views

on EPS on employees and the employer, in the world, Africa and Ghana; categories of EPS; lessons from countries/organizations which espoused EPS; challenges and benefits of EPS; and the conceptual framework and conclusion. The Third Chapter presents the methodology of the research and looks at sections on the research design, research population, sample size and sampling techniques and procedures, data collection methods and analysis techniques. Validity and reliability issues of the research, ethical consideration, field experiences, and summary of the chapter as well as the profile of GES are also presented.

Data analysis and presentation are discussed in Chapter Four. Findings and analysis of data on the assessment of E-SPV on GES of the public sector will be discussed. The last Chapter (Five) provides a summary of the study's contribution to knowledge, government HR policy, research conclusion recommendations, and limitations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The global competition for larger market share of the worlds' customers is gradually driving the world toward the achievement of complete e-world. Advancement in technological innovation has changed the face of conventional system of payment to a more effective, efficient and convenient model which is contrary to the "cash and carry" system. The ease with which transactions are done, the euphoria of safety surrounding its' transaction and the quick access with which funds are obtained has above all things placed the Electronic Payment System at a pinnacle beyond the "cash based system". Currently, the Electronic Payment Systems (EPS) and its popularity have attracted attention across institutions, business organizations (both small and large ones), and public as well as governmental settings including households and personal dealings. Human lives have become easy due to the emergence and advancement in technology. The Electronic Payment System is not restricted to any geographical, administrative, political or cultural jurisdiction but it moves across borders, events and time without any restriction (AL-Adwan et al., 2013; Antwi, et al., 2015; Kabir et al., 2015; Okifo, & Igbunu, 2015).

In order to achieve the purpose of this study, this chapter was grouped into five main headings. The first extensively presented The Concept and Adoption of Electronic Payment System, followed by the Categories of Electronic Payment Systems, Electronic Payment System in Africa and Ghana. The study further considered the Benefits of Electronic Payment System and Finally, The Challenges of Electronic Payment Systems.

2.1 The Concept and Adoption of Electronic Payment System

Electronic payment systems are defined as those direct electronic transaction transfers done through the use of smart cards, credit cards, and debit cards, electronic cheques which are in other words opposed to the traditional system of payment which involved physical cash and paper cheques. Subsequently, these forms of transactions use electronic networks like the internet which is mostly made possible through servers (Anyanwu et al., 2012; Agwu & Carter 2014). Similarly, Hamed & Berger (2012) and Sokobe, (2015) believes that electronic payment systems are digitalized payments which are done through the combination of two electronic variables, the mode and means complimentary electronic tools such as the internet and the smart cards and electronic cheques. In furtherance Hamed & Berger (2012) and Sokobe, (2015) stipulated that the electronic modes and means of conventional transactions are not time bound and gives exclusive freedom to the individual actor to perform any form of business transactions at their own convenient time and day.

Sumanjeet, (2009) emphasized the fact that electronic process of sending and receiving bills, payments and other transactions have no boundary and can be undertaken from the remotest vicinity around the world to another within a space of time provided there are logistical and infrastructural provisions such as internet connectivity and servers among others to expedite such activity. E-payment is of no exception and it's seen as a medium of making financial transactions and reduces the burden of joining undesirable and hectic queues. Transactions such as paying of taxes to the government through the revenue authorities, licenses acquisition from authorized department units can be made from the comfort of one's' home, paying of fees to educational institutions and purchases made at convenient stores and supermarkets etc. can be made through electronic systems and at any time of the day.

Electronic equipment such as the credit cards, debit cards, electronic cheques, mobile transactions have now taken center stage in the e-transaction circles. Others include smart cards and example is the visa card. In spite of the benefits of using e-system of payment, there are also some challenges such as accessibility, anonymity, reliability and public policies.

In that regard Humphrey et al. (2001) identified some conditions that can instigate the use of the electronic media and among them are; encouraging more and more firms and companies to accept payments through electronic means such as the credit and debit cards, mobile transfers, ATM transactions, electronic cheques, visa cards, e-zwich and among others. Companies can also adopt a system where salaries and wages of their employees are paid through the electronic means and also introduce regulatory and policy measures that would make it possible for refund of money in cases of unlawful transaction without adequate authorization or malfunctions from the e-machine. Proposition was mentioned that electronic payment systems can be promoted by using incentives like less charges for using electronic means of transacting business. Moreover, the development of infrastructures that will support the smooth running of the electronic payment system alone offers the opportunity for businesses and individuals to take advantage of. Anyanwu et al., (2012) postulated that developing the electronic payment system in Nigeria will inspire confidence in individuals and groups to accept and adopt the use of the system. It was acknowledged that the e-payment system has already received acceptance among those in the developed world and its being used for various kinds of transaction including shopping and buying from the grocery store.

In order to achieve complete e-world through the use of incentives where business transactions are performed without physical cash Hamed & Berger, (2012) propose a

Mudaraba driven business model which relates to earning profit rather than interest as a potential solution to facilitate easier use of credit cards for e-commerce activities in developing countries such as Libya. The integration of Shar'ia laws into the banking industry of Libya has generated wealth for most people within the country through the assessment of interest free loans which individuals, SMEs and larger organizations use in expanding their businesses to enhance the economic performance of the country. The advent of the electronic system of payment has emerged with new tariffs which are in sharp contrast with the Shar'ia law "Mudaraba" hence the researcher proposed that they should implement "Mudaraba driven business model" which will be beneficial for both Muslim communities and non-Muslims communities. One cannot debunk the fact that some e-commerce service deliveries has taken into consideration the Islamic system of operations and has developed a system to suit it to that effect.

AL-Adwan et al., (2013) and Okifo & Igbunu, (2015) found that most developed economies are far advanced infrastructural wise and are also logistically equipped as well as having the skilled personnel to address any anomalies as far as the concept of EPS are concerned. For instance in Saudi Arabia, the advent of the electronic payment system catapulted aggregate transaction from 23% in 2003 to 91% in 2010. This attests to the fact that the economy and its structures, including regulatory instruments were ready to accommodate the EPS. Thus, migrating from the use of paper processes to transact businesses and make payments to an electronic payment system. The manifestations of these increases in transactions shows the level of confidence people have in the electronic payment system and how reliable and convenient it is for people to use. In a report from a credible print media called "Mufutron" in Saudi Arabia, more than 80% of governmental and non-governmental organizations are currently

operating on SADAD electronic payment system. This signifies that the electronic payment system has been embraced by both the public sector and the private sector. This has eventually led to electronic profitability. It cannot be said on authority that technology alone can play the role of economic buoyancy but managerial role plays significant and pivotal standings in initiating and controlling technology and human resource to achieve economic development. However, the electronic payment system is much more convenient, cost effective and security is assured and also enhances economic prowess (AL-Adwan et al., 2013).

Additionally, some European countries have successfully migrated to and relies heavily on the electronic system such as credit and debit cards in transacting cash, for instance, the United States uses electronic checks whereas the Japanese uses cash at the point of sale. These transactional metamorphoses emanated from their traditional system of financial banking which has gone through a series of transformation until now. However, for these developed countries to achieve complete electronically wired system of trade, transactions, payments and banking, they have instituted what is known as the "cost based pricing". This basically means that the more the cost of transacting the business, the more the customer pays. Hence, the more paper works are involved, the more you pay (Humphrey et al., 2001).

The electronic payment systems are identical in its functionalities and only differ in some aspects of their operations and hence difficult to state the EPS type which is best for individuals and organizational usage. However, there are certain indicators that attracts the attention of users and these are being able to use the system easily, cost effective when using it, having standards in agreement, security of individual passwords to avoid fraudsters from assessing it, authorization and authentication consistency, acceptability and reliability, and lastly whether organizational activities

is supported by public policy (Kaur & Pathar, 2015). As Okifo & Igbunu, (2015) stated, an e-payment system gives greater freedom to people in terms of paying fees or salaries, bills, fines, taxes and among others. Nonetheless, the fundamentals that ensure the sustainability of electronic payments are consumer preference, cost, agreement, security, acceptability and ease of use as well as customer satisfaction.

In a study conducted by Rouibah, (2015) he found out that individuals who used EPS have shown satisfaction toward the usage of the system. Moreover, individuals and groups using the EPS reportedly said they will continue to use it for the next one year. However they would not hesitate to find an alternative EPS when encountering problem with one. In as much as electronic payment system has received lots of commendation from the masses, most people lamented there are some challenges associated with the system and among the challenges is the lack of security checks. Thus in a situation where a person's goods bought online are not delivered or there is a stolen identity, there should be an automated security alert for appropriate actions to be taken. Also, it lacks legal and regulatory backing since authorities can do little about the use of internet and internet agreements and more so, they believe that the EPS system lacks reputation.

On the contrary Harris et al., (2011) believes that, the electronic system of transaction using credit cards, debit cards, e-zwich, electronic cheques and the likes are sluggish and that people prefer the formal system. Moreover, the ability to keep validated data on customers informs mangers to view the formal system of operations in another perspective.

2.2 Categories of Electronic Payment Systems

The world has experienced electronic payment system in various forms. These diversities in EPSs are as a result of fierce competition between competitors and leading to innovation just to retain organizations' consumers and have a competitive edge. These different methods and types have been grouped by many researchers or authors.

Medvinsky & Neuman, (1993) and Wayner, (1997) categorized electronic payment systems into two groups: electronic cash mechanisms (token/electronic currency) and credit-debit or account based systems. However, Asokan et al., (1997) said EPSs categorization can only be done based on the temporal sequence of currency flows between the payer and receiver. PC-banking, credit cards, electronic cheques (i-cheques), micro payment, smart cards and E-cash formed the six types of EPSs identified by (Murthy, 2002). Wei Loon & Kevin, (2004) also divided EPS into, credit-debit systems business to business (B2B), token schemes specialist systems, and digital currency categories. Danial, (2002) sited in Sumanjeet, (2009) also classified electronic payments into three (3) categories of consumer payment, business payment and micro payment.

With the growing complexities in e-commerce transactions, different EPSs have appeared and dozens are in practice (Murthy, 2002) in the last few years. An effort to find a definite classification framework for electronic payment (e-payment) methods remains vague (Abrazhevich, 2004). It is essential therefore, to admit that there are countless electronic payment systems (EPSs) categorization types: some are limited especially the very old ones', others hardly contain new types and yet still some correspondingly intertwine. In an attempt to clear these omissions and confusions,

Anderson, (1998) classification framework will be used to supplement the above categories. This classification structure will form the basis for EPSs methods and types in this research. Discussing and evaluating every author's classification scheme will be time consuming hence it is vital to consider one.

Anderson, (1998) divided EPS into four categories thus: online credit card payment system, electronic cheque system, electronic cash system and smart card based electronic payment system. The classification framework of Anderson, (1998) gives a clear picture of this framework and a detailed explanation of each method follows.

2.2.1 Electronic cash payment system (e-cash)

The electronic cash payment system is also referred to as digital cash through which money is transferred by an individual in safer, faster and relatively lower cost using the internet. The e-cash payment operates through multiple networks where majority of individuals and organizations have subscribed to and it's ideal for micropayments unlike the banking system. The electronic payment system is not joined with any networks or storage devices or servers but operates using those mediums and its independent on it won.

The system, the merchant, together with the customer needs to have an active running electronic cash account with an amount of money usually called "token". These tokens which are the monetary values are what the customer uses in exchange for goods. The account is created through the installation of "cyber wallet" and then proceeds by synchronizing with your bank account of which the "cyber wallet" will become operation for transacting business.

Authentication and approval for withdrawal is done by bankers after checking the identity of the consumer when they issue command to withdraw an amount of money

to make payment online. After issuing payment to merchants online, the amount is then deducted from the current account of the consumer. The e-cash payment system only works on sites that accept payments through the electronic cash. The accounts of merchants are credited after goods are delivered. This system does not allow for the identity of the payer and the payee to be known. Anonymity can allow for a person to use transactional information twice.

Anonymity of consumers which mostly leads to double spending is the major security threat to the electronic cash payment system. However, this system uses an automated mechanism with a single factor encryption that can be used ones.

2.2.2 Electronic Cheque (eCheque) Payment System

Electronic cheques are the twin of paper cheques but only in an electronic form. This form of electronic payment is done during an on-screen interaction during which the money is transferred over the computer using a network to complete the transaction. Clients who use the electronic cheque systems are offered electronic cheque books which are portable and combine a safe hardware and software. The consumer is given a private key which the consumer uses to generate and sign the e-cheques. The interface of the cheque poses the features of the financial institutions' physical cheque book. When transacting business using the electronic cheque, the payer issues the cheque on the computer which is cryptographically signed and e-mailed for the bankers to verify, endorse and proceed with payment into the merchants account.

The electronic cheque is secured using digitalized signature and PIN. This implies that it uses two security authentication verification portals before transaction can successfully go through. The two-factor security requirements needed before transaction can pull through gives it an edge over the e-cash system of payment.

2.2.3 Smart Card Payment System

Smart cards are a credit-card-sized, plastic card with an embedded integrated circuit chip providing users with mobility and data portability, i.e. direct access to cash or services. It combines plastic and magnetic cards used for different identification purposes into one card, which can access multiple services, networks and the Internet. The chip therefore, reduces the number of cards, making one card the access key to many accounts. The smart card as a payment instrument has processing power that allows the smart card payment system to be used for multiple functions and/or applications. This of course, reduces the overall number of cards in the consumer's wallet, though there are many arguments and issues about whether or not smart card is secured and safe enough to store such information.

International standards for the smart card procedures and the smart card itself are both still evolving. In general, smart cards currently cannot display information or directly accept input from the user. For the user to access the information the smart card contains, the card needs an interface to communicate with a reader or terminal, such as a merchant point-of-sale.

A vast amount of information and possible cash is stored on the smart card. If the card is lost or stolen, there is no way to recover the information or the money. This causes a true potential fraud or major fraud vulnerability of smart card payment system. The smart card payment system provides three-factor authentication security mechanism for the verification and authentication of a given user. These are personal identification number (PIN), digital signature, and fingerprint biometric. This mechanism increases the security level of this payment system.

2.2.4 Online Credit Card Electronic Payment System

The concept of crediting money has been in existence since the 1800s where people were credible and wealthy merchants in society allowed trust wealthy individuals to buy their goods without making any payment or paying upfront. This presented the opportunity for traders and merchants at the time have a broader customer base that in return pays their debts after credited goods have been sold.

By the early, 1950s the ideology of crediting goods to customers become known to the masses and practiced by famous and rich merchants. As time goes on, terms of agreement become part of the deal and people who broke the agreement suffered an ordeal from all merchants and not just the one he/she refuses to pay.

A credit card is an account that lends money to the consumer, meaning consumers are allowed to purchase goods or services on credit. The credit card, being a token of trust, transfers the risk of granting credit from a merchant to the card-issuing bank. Both consumers and merchants must register with a bank. The participants involved in credit card payments include:

i) Customer/Cardholder: The consumer doing the purchase, using a credit card that has been issued by its issuer.

ii) Issuer: The financial institution (i.e. bank) that issues the card to the cardholder. The issuer guarantees payment for authorized transactions.

iii) Merchant: The merchant offers the goods and services, and has a financial relationship with the acquirer.

iv) Acquirer: The financial institution of the merchant. The acquirer processes credit card authorizations and payments.

A cardholder visits a cyber-storefront via a browser. After selecting the items to be purchased, the customer (online shopper) fills out a payment request, and selects from the credit cards he wants to use and the customer transmits the payment request to the payment gateway (or merchant's web server). At the payment gateway, the information is send to the merchant. The merchant generates a request-for-payment authorization from the cardholder's financial institution. His digital signature, transaction identifier and payment instructions are included in the encrypted request and forwarded to a payment card-processing center or payment gateway of the acquirer, where it is decrypted, processed and verified.

After the transaction is verified, the payment card-processing center converts the authorization request into the format used by financial networks and then forwards it for approval to the cardholder's bank (issuer) for authorization. The issuing bank returns an approval or denial response to the payment gateway in response to the authorization request. The payment gateway will send this response (authorization or failure) to the merchant. If the bank approves the authorization, the payment gateway sends a notification in the form of a digitally signed and encrypted message to the merchant, which can be claimed later from the merchant's bank for deposit.

Once the merchant has received the payment gateway's digital signature, he will ship the goods to the cardholder knowing that the customer transaction has been approved. The merchant will request settlement from the issuer, via the payment gateway via the acquirer. The online credit electronic payment system applies a two-factor authentication mechanism in verifying the users during payment process.

2.3 Electronic Payment System in Africa and Ghana

The chunks of researches conducted on the subject of e-payment system were done in developing countries particularly in Africa (Kabir et al., 2015). According to Agwu & Carter, (2014) Electronic payment systems have gained an appreciable level of acceptance among the people living in Africa. The most preferred electronic payment media used by the dominant group is the mobile phone banking commonly known as mobile banking as compared to the use of ATMs and internet banking. Nevertheless, ATM services have reached a wider coverage in the sub-region.

The emergence and the adoption of the e-payment system in the Africa sub-region have come to avert certain problem associated with old system of payments and banking. For instance, most banks close early and do not work during weekends which restrict transactions and payment during certain hours of the days and make it impossible to withdraw money on Saturdays and Sundays but EPS has brought the convenience of transacting business at odd hours and during weekends. Being able to withdraw money, pay bills and transact other ancillary activities both internally and internationally has boosted the confidence of people to deal with banks knowing that they can access their money at any time of their choice. Again, the tendency to transact business without holding physical cash which usually attract the attention of thief, squatters and armed robber has increased the trust of people to go the electronic way which also saves time (Ayodele, 2015; Kabir et al., 2015).

For instance Obiri-Yeboah, et al., (2013) investigated the Role of Information Technology on Banking Service Delivery: A Perspective from Customers in Ghana. The study disclosed that, the influence of Information technology (IT) is a plus for customers and banks respectively. Customers preferred and utilize ATM, internet

banking and electronic Fund Transfers at sales point with the most preferred facilities include ATM, direct deposit, withdrawal services and branch networking. Customer's knowledge about the electronic service delivery was satisfactory as it gives them the opportunity to transact business as and when they want even during weekends. In the same way, Tijani & Ilugbemi, (2015) explored Electronic Payment Channels in Nigeria Banking Sector and Its Impacts on National Development. It was discovered that EPS has contributed to the economic development of Nigeria. Hence he recommended that regulations should be put in place to advance the adoption of the electronic payment system.

Attah-Botchwey, (2014) also determined the adoption, challenges and some critical successes of electronic banking in the Ghana. The study revealed that e-banking allows easy access to money and account information is 24-hours. E-banking save time for customer to carry out other duties, the adoption has eradicated long queues in relation with Traditional means of banking. Readily available of ATM facilities at vantage point in the locality will help reduce distance and time in accessing the facility, moreover the adoption of e-banking attracts customer to patronized the bank products.

Aside all the citations attributed to the electronic payment system, the adoption of the system particularly in Africa is being hindered by indispensible factors including infrastructural decay which does not support the smooth running of the system. Moreover, abuse of client and the lack of customer care when individuals want to move from the manual format to the electronic format hinder the wider spread of the EPS. Additionally, robbery at the point of withdrawal especially at the ATM machines sometimes put fear in individuals with the intent to go electronic. He therefore, recommended that there should be improvement in infrastructures such

electricity supply, internet access, security measures. Also, sensitization program should be embarked upon to educate non-electronic payment users both in the formal and informal sectors (Ayodele, 2015).

Additionally, Agwu & Carter (2014) observed that the successful adaptation of the EPS in Africa is bedeviled by lots of challenges with the cost involved in the installation of these machines and the maintenance expenses being the paramount among them. More so education of clients was also identified as major challenge financial institutions face in Africa in an attempt to merge with the e-world and hence calls for the government conjunction with industry players to take up the challenge in educating their customers in order to compete in the global front. Poverty and the lack of infrastructures to support the migration from manual system of operations to electronic system are other significant hindrances to the implementation of electronic payment systems (EPS). Infrastructures such as servers, constant supply of power, swift and unwavering networking and other support infrastructures are lacking making it extremely difficult for e-payment and e-banking to be smoothly operated especially in most developing countries including the Sub-Sahara Region of Africa.

Agyeiwaah, et al., (2014) examine the challenges of electronic payment systems (E-Zwich) at GCB and the extent to which users and non-users differ in terms of the identified challenges. Adopting independent sample t-test both users and non-users share same difficulty and frustrations. The challenge is social, regulatory or infrastructural (Bassey, 2008), the views of both users and non-users are the same. Ali and Al-Jabri (2011) write, electronic payments have numerous challenges which make most societies still stick to the old way of transacting business when they can easily do that through internet banking. It was observed that, the challenges range from social, culture and human challenges.

Nzaro & Magidi (2014) evaluated the role of electronic payment systems in financial institutions using a case of a Savings Bank in Zimbabwe. Collecting data from 20 employees of savings banks, 40 from their customers and from 5 top managers, the study concluded that, people desire to use the e-payment system but are limited due to lack of knowledge while the banks also suffer from the lack of expertise to handle its operations and educate customers on its benefits.

Antwi et al., (2015) focused on the effectiveness of form of electronic payment system in the Tamale metropolis in Ghana. There was lower patronage of e-zwich smart card due to long queues at banking halls, link failures and point -of-sale devices. The adoption and the utilization have been successful. The mechanism to increase patronage is through sanitization workshop, availability of point-of-sale devices and enhancement of smooth operation of the devices.

Nwaolisa & Kasie, (2012) examined users' acceptability and payment problems encountered by Nigerians in utilizing electronic banking system. Nwaolisa & Kasie, (2012) discovered that the usage of e-payment system is low among Nigerian citizens in spite of the efforts by the Nigerian government migrate the whole financial banking system unto the electronic system. The low incidence of e-payment usage among Nigerians is as a result of inconsistent supply of power leading to erratic power outages. They also lack the infrastructural support to sustain the full operation of the electronic payment system. Additionally, socio-cultural factors policy regulations do not favour the citizens of Nigeria in adopting electronic payment system. There is therefore the need to take care of all barriers to innovation to promote and enhance the use of technologies.

Issahaku, (2012) assessed the Challenges of Electronic Payment Systems in Ghana: The Case of e-ZWICH. In Issahaku, (2012) study, key challenges inhibiting the public acceptance of e-zwich was identified and they include lack of constant supply of internet to operate the machine, the fragility of the e-zwich machine leading to constant breakdown, moreover service delivery through the use of the e-zwich machine is very slow causing undue queues at service centers. Issahaku however, identified challenges such as low level of acceptance, limited infrastructure access, practical capability, and menace (mostly in Africa) has narrowing the efficient and effective EPS. That notwithstanding, there is a gradual wide spread acceptance of the electronic system among Ghanaian citizens. Africa governments and stakeholders need to invest heavily in IT infrastructure as well as create a beneficial milieu for operative and resourceful EPs (Bassey, 2008 & Issahaku, 2012).

Bassey, (2008) exposed three categories of challenges in Africa namely infrastructure, regulatory, "cultural-cum-human dimensions". In his view the infrastructural challenge in relation to ICT accessibility, affordability, usage, interconnectivity network failure, low bandwidth, high cost of connectivity, and frequent power outage are overriding.

According to Kumaga (2010, p.22) "Electronic payments in most African countries is very limited in use or virtually absent". In most African countries the required infrastructure, legal and regulatory framework for electronic payments are lacking (Taddesse & Kidan, 2005). In particular, e-payments infrastructure such as internet and mobile networks are not widely available in Africa. Moreover, banks and other financial institutions are not adequately automated to enable e-banking and e-payment (Kumaga, 2010).

In an article entitled "Digital Money in a Digitally Divided World" Bassey, (2008) revealed the challenges to the adoption of e-payment systems in Africa. The author put the challenges into three categories namely "…the infrastructure, regulatory, cultural-cum-human dimensions". In the author's view the infrastructural challenge is the most paramount. Infrastructural challenges relate to ICT accessibility, affordability, networks, connectivity and usage. Related to these are issues of interconnectivity network failure, low bandwidth, high cost of connectivity, and frequent power outage. This presupposes that the future of e-commerce in Africa is intrinsically linked with investments in IT infrastructure.

The variables such as educational level of individual, age and their skills influence the acceptance of the electronic payment systems. That's the twenty first century is exposed to a whole IT world which makes it easy for them to have a natural attraction and taste for the use of electronically equipped gadgets without any problems unlike the past generations known. Again, as the educational levels of individuals' increases, they are more liable to use embrace IT equipment for easy execution of certain tasks. Also, having immense skills and likeness in IT is only natural to allow that person the luxury to easily adapt to electronic task performing materials. In the same way, when the system is easy to use in terms of speed, convenience and storage enhances acceptance among the masses. The researcher asserted that, it is imperative for entrepreneurs to equip themselves and improve their knowledge in electronic payment systems in order to appreciate and adopt it in their businesses. This will help influence their customers to use the system as well. Lastly, affordability in installing the system in especially SMEs helps to promote the spread of the system usage since they deal with the informal sector which takes about 70% of businesses in developing countries (Sokobe, 2015). Getembe et al., (2013) explored Electronic Money Transfer Systems

and Business Process Management among Commercial Banks in Kenya. They also, accepted that there are some benefits associated to the electronic payment system regarding the avoidance of long queues, low cost and others. However, some negative occurrences such as system failures, fluctuations in power supply etc.

2.3.1 Popular Electronic Payment Systems in Africa

i. **Real Time Gross Settlement (RTGS)**

Real Time Gross Settlement (RTGS) refers to funds transfer systems where transfer of money or securities takes place from one bank to another on a real time and on a gross basis. 'Real time' means payment transaction is not subjected to any waiting period and 'gross settlement' means the transaction is settled on one on one bunching or netting with any other transaction. Once processed, the payments are final and irrevocable. RTGS is controlled by the central bank of the country and is most suitable for low volume but high value transactions.

ii. **Automated Teller Machines (ATMs)**

This is a combination of a computer terminal, with cash vault that allows a bank customer to access their funds by punching in a PIN (Humphrey et al (2001). Most ATMs are located outside the bank and on public places that are far away from home bank offices offering retail banking services to customers. In the banking halls, there are Point of Sale (POS) machines where the ATM cards are swiped and a customer can access their funds after punching the pin. The customers make deposits, view mini statements and pay their bills over the POS machines (Abor 2004).

iii. **Credit Cards**

These are defined by Pierce, (2001) as a plastic card that assures a seller that a person using it has a satisfactory credit rating and that the issuer will see to it that the seller receives payment for the goods delivered. In Ghana, the card holder can go to retail outlets that have Zimswitch to buy their groceries and demand cash backs provided that the account of the card holder has sufficient funds.

iv. Western **Union**

This is defined as money transfer systems were the funds are transferred electronically between countries from the sender to the receiver. The agents are paid a commission for transferring the funds on behalf of Western Union. In Ghana, the western union's agents can only receive but not send money from abroad. They are only allowed to send money from one city to another around Ghana.

v. **Mobile Phone Transactions (Mobile Money)**

This is a mobile cash transfer facility that was launched by MTN Wireless a mobile cell phone service provider. This service allows users of the system to send and receive money, buy airtime and make other payments using their mobile phones. Money can be transferred customers who use the same network but effort are being put in place to enable the transfer of money across different networks throughout the country using the assistants of agents or by transferring it yourself.

vi. **Telegraphic Transfers**

These refer to an electronic means of transferring funds overseas or from one country to another (Annon, 2003). It is also known as TT which means a cable message from one bank to another in order to affirm the transfer of money. The use of telegraphic

transfers is believed to reduce cost of transaction considerably and this reduction in cost easily can be transferred to the banks' customers. In the end, the concerned bank will be able to create a competitive edge over its rivals.

vii. **E-Zwich**

The e-zwich is an electronic card used in Ghana for transacting businesses and making payment. Currently, most workers at the public sector are being migrated onto the electronic-zwich system. The card can be used for both payment and receiving cash from other employers, customers and others. The model operates on networks which needs a constant supply of internet and electricity to function to perfection. Service outlets such as grocery stores, mobile marts and a host of others have adopted the system to reduce the conveyance of physical cash.

vii. PocketMoni as an e-transaction device

In Nigeria, PocketMoni is a mobile transaction (payment) solution designed to allow users conduct financial transactions anytime, anywhere, from your phone. With Pocketmoni, your phone is now your bank and your mobile phone number becomes your account. Pocketmoni serves are secure, cost effective, convenient and available for everyone in Nigeria. It is easy and secure way to engage in business transactions in an online process (PocketMonie User Guide, 2012).

2.4 Challenges of Electronic Payroll Voucher System

The challenges of the electronic system are grouped under the following; Fraud risk associated with e-transaction, Money Laundering associated with e-transactions, Privacy and Anonymity associated with e-transactions, Technical problems associated e-transactions and Cultural problems associated with e-transactions.

2.4.1 Fraud risk associated with e-transaction

According to Larry (2008), the global networks, credit, debit and charge cards can never avoid the risk of crime entirely". The individual crime victims, merchant service providers and retailers always encountered the conflict of interest. After sloping by around half between 1991 and 1995, plastic fraud losses have risen steadily and are estimate of plastic fraud doubling in the next two years and with recorded fraud statistics rising. The pattern of fraud is changing. Electronic transaction frauds are rapidly emerging in the organization. It becomes a major problem for business today. As organizations struggle to remain competitive in a global marketplace, the business is more complex, systems are left open to employee manipulation and without a finely tuned internal control system, and the opportunity for significant loss is always present. Electronic transaction fraud and computer crime are found in Nigeria (Yahoo boys, Hackers, etc.). There are several internal forces which can make electronic transaction fraud more likely to prevail in the organization, such as poor internal controls, poor personnel policies and practices, and lack of honesty at the top levels of management. Islam (2014) assessed Security Challenges of Mobile Banking and Payments System. The study discovered that in spite of the fact that electronic means of undertaking transaction has gained prominence in these recent times, users however have their own reservations about some of the constraints or challenges associated with the new system. Customers showed satisfaction towards being able to use their mobile phones to do financial transactions and also added that users have more control over their dealings but resented security subsiding owing to the flood of smart phones in the system. Customers argued that with the advancement in technology and growth in applications, the threat of using mobile phones in transacting businesses is increasing at an increasing rate.

AL-Maaitah, et al., (2015) studied the Security issues concerning the Electronic Payment Systems. The study found that one issue that bridges security is encryption and authorization hence there is the need for industry players to adopt secured and proper encryption model to change the perception of potential and aggregate users from thinking that the EPS of not a safe system and hence inspire confidence in the use of the electronic system. Kennedy, (2011), suggested steps to boost security regarding the use of the EPS and among which are;

i. Collate and identify threats through the perceptions of individuals

ii. Develop regulatory policies to check those threats

iii. Use the right security tool in IT to safeguard the system from such frauds

Assess the performance of the security measures put in place to ensure the identification of loop-holes and address them as early as possible.

Akintoye & Araoye, (2011) developed a model process to redress e-fraud, using existing literature as a guide. In the researchers observations the concept of e-fraud and its underpinnings needs to be understood in order to estimate the magnitude of the e-fraud as an act. It must be noted that e-fraud is not faced by only individuals but also big organizations including SMEs which endeavors to deploy electronic payment systems in their business dealings. A grave issue of concern regarding the e-fraud has throughout literature been explicitly expressed is the unknown identity relating to e-fraudsters. That is, it is extraneously difficult to identify individuals involved in e-fraud activities. The degree of e-fraud ranges from less to severe damage including the extrapolation of peoples' identity and passwords which are most time used as a weapon to blackmail people of high reputation.

2.4.2 Money Laundering associated with e-transactions

Money laundering is defined as the act of disguising the origin or ownership of illegally gained funds to make them appear legitimate. The huge sum of money is obtained through illegal activities and has been linked to nearly all kinds of crime for profit including organized and white collar crimes. This money must be laundered in order to avoid seizing by the law enforcements and handed to the government. There was a growing concern on money laundering in Nigeria as it is often associated with drug trafficking, bank savings abuses, real estate fraud, and tax evasion. The process of transferring funds through electronic messages between banks is known as wire transfers. It acts as the primer step in money laundering where the profits from organized crimes, for instance drugs, gambling, racketeering, and prostitution must be somehow slipped into the banking systems before it can be safely spent. It is the duty of the bank non-validators to report any detection of potential money laundering via direct telephone notification to the bank regulators and financial enforcers (Maiami, 2005). The high number of transaction and the flow of wire transfer through fully automated systems have made it hard for it to be detected by law enforcements and confuse audit traits.

2.4.3 Privacy and Anonymity associated with e-transactions

With the increasing usage of the Internet, the fears of privacy abuse become a top concern of most of the Internet users. In fact anonymity features of electronic transaction systems play a vital role in protecting privacy in an electronic world, and as the safeguard for a privacy protecting Internet. Nonetheless, the anonymity of an Internet user is mainly compromised through the transaction method that is employed widely on the Internet – credit card, since most of the information is being collected on the Internet when users enter their credit card purchasing details. As consumers

prefer to keep the details of their transaction private, conversely merchants and issuers in favor to ensure they capture and possess enough an appropriate and sufficient record of their transactions. Then privacy may become a thorny issue here. For instance, the Economic and Financial Crimes Commission (EFCC), the Independent Corrupt Practices and allied Commission (ICPC), and other law enforcement bureaus have participated in a wide-ranging look at the issues of the emerging e-money technologies. Last but not least, privacy must be regarded as a political right that consumers enjoy and ought to be respected (Olesin, 2006). At the same time, precautions need to be put in place to ensure that electronic transaction systems are not used as a means to thwart existing laws. Ondieki, (2014) identified some of the impediments of supermarket customers in the use of ATM debit cards to offset payments in supermarkets and to determine the financial impact arising from lack of use of ATM debit cards in making payments in supermarket. Ondieki, (2014) found even though the use of ATMs have become ubiquitous due to its convenient and how comfortable it is, most people do not use ATMs at supermarkets and mobile mats. The basis for non-usage was attributed to either forgetfulness or refusal to pick their ATM cards when coming from the house. Moreover, a more striking reason that was discovered for non-usage was the fact the people have become aware of e-fraud and hence fear for fraudsters whose intent is to cunningly observe their PIN numbers whereas others shy away from public usage perceiving that they might be charged an exorbitant amount for using it. Affirming the presumptive assumptions of the perceptions above, it was confirmed that customers are charged for every withdrawal they make using the ATM card.

2.4.4 Technical problems associated e-transactions

According to Chibueze, (2006), every new technology, when exposes and comes to the public, it faces so many difficulties. It takes time that people getting familiar with it. The other point is that since the technology like e-payment is new, there should be so many thing invented and prepared as a base for expanding of it. Most of equipment of e-transactions is expensive and not easy and simple to anybody to apply them. The other problem is to expand and grow the other part that are engage in or are part of e-commerce, like telecommunication and their services. In the case of e-commerce and e-transaction every end user (home or office user) must have at least one phone line and the connection to the Internet. As to be integrated system in all over the world, the infrastructure should be well developed in all country to have a real integration in this field. Kaur & Rajneesh, (2014) explored Electronic Banking in India: Innovations, Challenges and Opportunities. There is been an overwhelming transformation in India's banking sector for the past two decades. These transformations emanated as a result of change in consumer preference in competition within the industry through the use of innovative technologies to hook customers to their banks. Undisputedly, these innovative banking techniques such as ATMs, credit cards, RTGS, debit cards, mobile banking and among others has improved service quality and increased the satisfaction levels of consumers. However, with the inevitable breakdowns of service servers, slow running of networks, malfunctions and others identified with these electronic gadgets leave room for more improvements to avert these challenges faced by the banks.

2.4.5 Cultural problems associated with e-transactions

Most people still like to do their businesses in traditional form as before because they feel that the traditional system guarantees safety of their transaction. These people

like to touch the documents and money in hand and doing the process physically and manually. They believe in every dealing and business, physically rather than virtually. There are many people even in the 21st century, who do not agree and accept all new technologies. They are always not certain and assured to the technologies. They do everything like old people. The job is very hard to pursue and to make these people eager to do in this way and accept the technologies. One reason is because of so many malfunctions, fraud and unavailability of devices in the time of need (Andrew, 2004). Every defection makes the public opinion divert from the advantages of new technologies. Karimzadeh & Alam, (2012) investigated the Electronic Banking Challenges in India. The study found that security and legalities are the major challenges confronting EPS in India. Socio-cultural factors and beliefs were recorded as another impediment to the acceptance of EPS and managerial and banking policies also has a significant effect on the acceptance and usage of e-payment and e-banking in India.

2.5 Benefits of Electronic Payroll Voucher System

Just as demand influences supply, so does payment also influence the means through which money should be paid and this leads to developing convenient ways to satisfy employees. The use of e-payment system has a positive impact on the economic growth and contributes immensely to GDP per capita. Among all the electronic payment systems, ATMs is the most contributors to economic development whereas others showed otherwise. In view of this the researcher beliefs that future advances in establishing a cashless society should put economic development first (Oyewole et al., 2013).

USAID (2014), identified that a firm that adopts an e-transaction means, improves accessibility to financial services, creation of enabling bionetwork for value-added and business services for recipients payment, cost saving and efficiency and increases transparency, whiles diminishing the siphoning of funds, waste, and security risks to program employees and accomplices. The paper further outlined that e-payment platforms can empower entrepreneurs quicken, advance accountability, upsurge transparency, fiscal inclusion, and unlock the private sector (USAID, 2014).

Exchange and trade expand a countries economy by contributing approximately 3% to GDP. In spite of the enormous contribution of e-payment adoption, the cost involved in undertaking it activities are one-third less than paper transactions and promotes economic flexibility and proliferates the business environment through fast, swift and low charged transactions. Due to the low cost of dealing with e-transactions a throng of individuals and businesses belief that all forms of monetary exchanges should use the electronic media (Humphrey et al., 2001).

According to Aigbe & Akpojaro, (2014) electronic payment system has proven to be secure and checks the incidence of fraud and vulnerability as a result of carrying physical cash and hence inspires individual confidence to transact business using the e-system. Khaledi et al., (2012) investigated the factors affecting customers using electronic banking services among customers of Parsian Bank. In the study all the "Six Guyana Pykaraynn model" was satisfied. The EPS was useful, it is easy to access and use the system, and it is pleasurable, offers credible information, security and confidentiality quality of the connection.

Shaikh (2014) attempted to understand and identify bankers perception of benefits and risks associated with electronic banking facilities in Ethiopia. Shaikh (2014) in

trying to understand the perception of bankers about the electronic payment system, they commented that its saves time and unnecessary queues, it reduces the risk of carrying physical cash and paper cheques; it also reduces inconveniences and takes care of HR requirements. Moreover, Moertini et al. (2011) highlighted that risks concerning payments can be reduced by educational institutions through the electronic payment system. To that effect, the study established that knowledge on the use of the system will not be difficult because most students are used to the IT world and how it operates and hence would not take much effort for students to embrace the electronic payment system. Moreover, long queues and stress students go through during the payment of fees and other charges will subside to a minimal level.

2.6 Conceptual Framework

Guided by Rostow's (1960) stages of economic development model, the researcher deduced her conceptual framework of Ghana governments' Implementation of the Electronic Salary Payment Voucher (E-SPV) system implemented in 2014. Until the final implementation of the E-SPV in 2014, payment systems in Ghana went through a series of stages that have been grouped under the traditional stage, precondition for take-off and the actual take-off, drive to maturity and the age of high mass consumption. For the purpose of this study, the model was segregated and integrated under four broad paragraphs but infused the elements of the Rostow's model.

Prior to the implementation of Electronic Salary Payment Voucher, payments started on table tops which were characterized by insecurities as a result of carrying physical cash which leaves the receiver or employee at the mercy of robbers. This stage lacked the technological know-how to facilitate and enhance payment of teachers under the Ghana Education Service. This system of payment known as the traditional method

posed challenges of various degrees including cost ineffectiveness involving more paper works and took a lot of time to complete the payment cycle and in extreme cases leads to non-payment. For instance in June 2014, report from the Controller and Accountant General's office affirmed that the traditional system of payment was faced with the challenge of undue delays and it took three months for information on salary payment to move from the district and regional level to the Controllers' office and in situations of anomalies further months are spent to remedy the situation. This stage is referred to by Rostow's as the "Traditional Society" other refers to it as the "rigid society".

The advancement in technology coupled with the increased in levels of education, skills and creativity led to the development of technologically enhanced equipment which delivers services with ease, speed and creates convenience. The general growth in education perpetuated the easy use of electronic gadgets. Unlike the traditional stage where electronic gadgets such as smart phones, tablets, laptops etc. with its accompanying flood of applications for android, windows and apple electronic equipment were not ubiquitous but has become a common handy material in today's dispensation that has expose an extensive percentage of the population to the efficient use of electronic gadgets. Convenience in technological transactions like information, money, videos, and audios and among others instigated people's desire as well as government cravings to deploy technology in its core mandates such as payment of employees at the public sectors. This stage according to Rostow's is termed "precondition to take-off".

Following the acceptance of technology among society, the drive for experiencing safety, convenience, privacy which accelerates socio-economic development was on the rise with competition within the banking sector being the fuel instigating customer

preference. E-payment systems were introduced by some banks. For instance competition for greater market share compelled Trust Bank Limited (TBL) to launch the first Automated Teller Machine (ATM) in 1995; in 1997 the Social Security Bank now called SG-SSB Bank introduced the first Cash Card known as the "Sika Card". Also, in 2001, Standard Charted Bank introduced the debit card; Barclays Bank initiated the mobile banking in 2002 and the E-zwich was introduced in 2008 by the Central Bank of Ghana to promote a technologically friendly system of payment and transacting business. Hence the psychic of individuals was adequately programed to willing enroll on these developments. The emergence of these electronic means of payment created the conditions Rostow's refers to as "Take-off".

The final stage of this conceptual framework combined Rostow's drive to maturity and age of mass consumption. At this stage, the growth in the number of employees at the public and government institutions to a stage where the traditional method of payment cannot be effectively carried out hence the need for an alternative means of payment. With the conditions such as education, availability of infrastructural support, easy access to electronic equipment, how secure and safe the E-SPV is, its usability friendliness and among others set, the government through the Controller and Accountant General Department adopted and implemented the Electronic Salary Payment Voucher (E-SPV). According to the Controller and Accountant General's Department the E-SPV was implemented mainly to:

i. Promote easy, faster and better management of salary Payment Vouchers (PVs) where adjustment in the validated Salary Payment Voucher (SPV) is done in real time.

ii. Helps eliminate the logistical challenges faced with delivery of printed salary payment vouchers around the country

iii. Facilitate quick and easy access to historical salary payment voucher for audit and monitoring

iv. Provide easy access to various reports for immediate decision making

v. Ensure communication between CAGD and all heads of MDAs and MMDAs on data regarding salary payments on time.

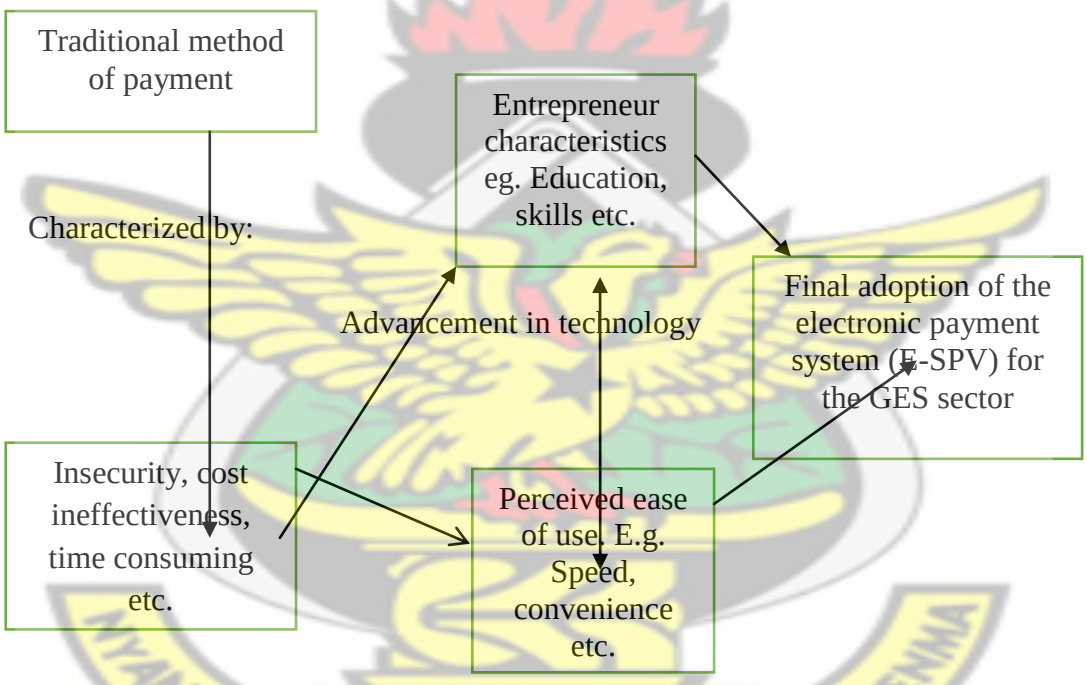

Figure 2.1 ***The Implementation of the Electronic Payment Voucher System in Ghana.***

Source: Adopted from Rostow's (1960) five stages development model.

CHAPTER THREE

METHODOLOGY AND ORGANIZATIONAL PROFILE

3.0 Introduction

This chapter presents and discusses the methodology adopted for the study. In this regards the research design (quantitative and qualitative), research strategy, population of the study, sampling size and sampling techniques have been discussed. The sources (primary and secondary) of data, data collection techniques and data analysis instruments, validity and reliability and ethical considerations, of the data as well as a profile of the Ghana Education Service has also been outlined.

3.1 Research Design

A research design according Mouton, (2001) is a strategic plan or comprehensive and consistent way of how a researcher intends conducting a study. The plan entails series of schedules compulsory to undertake a research work (Bryman, 2005).

The study adopted a descriptive survey design. A survey is a type of research design that seeks to find associated factors with some appearance, outcomes, situations or types of actions (Kulbir, 2009). However, Osula, (2001) noted that descriptive survey is versatile and practical, to the researcher that help identify present needs. He further explained that descriptive research is basic for all types of research in assessing a situation as a prerequisite for conclusion and generalization. The choice of this design was informed by the fact that it is a scientific and theoretical tool that managerial science research William, et al, (2006) endorses for issues that need large demographic and related data to assume a hypothesis and to scrutinize that data for causes, consequences, and analyze strengths of priority problems within a particular

geographical area. The survey also helped in identifying variables and concepts that may warrant further exploration and provide an indirect way of finding answers to key study questions, which intend lessens inaccuracies but unearth some challenges of the electronic payment voucher system in Ghana and beyond (Patton, 1990, and William et al., 2006).

The study also adopted a mixed method which is a combination of quantitative and qualitative methods. A quantitative research involves the gathering and analysis of data using statistical procedures with the aim of confirming the hypothesis of a study or otherwise (Creswell, 1994).

Qualitative research emphases on the qualities of research words or explanations that is difficult to quantify and advance themselves to clarification or rebuilding. Consequently, exploration of the meanings, descriptions, classifications, appearances, metaphors, and concepts of what actually embodies the components of the research under study is termed qualitative research (Glesne, 2011). Qualitative research was used to find out the various concepts and adoption of EPS, the methods and categorizations of EPS, EPS in Africa and Ghana, challenges and benefits of EPS and the conceptual frame.

3.2 Population

The entire number of individual or objects whose characteristics a study considers is known as the population Saunders et al., (2007). The targeted population of this study includes all employees of the Ghana education service who receive their salary through the Controller and Accountant General Department. The target population is made up of employees of the Ghana Education Service (GES) comprising departmental heads, management non-validators, senior non-validators and junior

non-validators also non-validators of the Controller and Accountant General Department-CAGD were all contacted and questionnaires answered and interviewed respectively. Specifically, all members were stationed within the selected six (6) regions of Ghana. Thus, three (3) southern regions comprising Greater Accra, Ashanti and Western Regions and the three (3) Northern Regions (Northern Regions, Brong-Ahafo and Upper East).

Table 3.1: ***Population of the regions under study***

Region	**Number of Teachers**
Greater Accra	18,893
Ashanti	50,026
Western	20,796
Northern	22,736
Brong-Ahafo	27,979
Upper East	10,807
Total	**151,236**

Source: *Ghana Annual Schools Census 2012-2013 (Modified 12th September, 2014)*

3.3 Sample Size

According to Strydom et al., (2005) sampling means taking any portion of a population or universe as representative of that whole population. If the population is small, the sample should comprise a reasonably larger percentage of it. Large samples however, enable researchers to draw more representativeness and accurate conclusions than in smaller samples.

Table 3.2: ***Tabulation of the sample size in each region***

Region	Number of teachers	Sample size
Greater Accra	18,893	63
Ashanti	50,026	144
Western	20,796	70
Northern	22,736	82
Brong-Ahafo	27,979	90
Upper East	10,807	51
Total	**151,236**	**500**

Source: *Ghana Annual Schools Census 2012-2013 (Modified 12th September, 2014)*

3.3.1. Sampling procedure employed

The study did not cover the entire teacher population in Ghana but a selection of a sample from the population. The two sampling techniques considered for any research are probability sampling and judgmental sampling or non-probability.

According to Saunders, et al., (2009), probability sampling occurs where there is a reachable sample frame and that which propose the same likelihood for every member in a population to be preferred. There are four basic technique types under this sampling identified as: simple random (using random digit charts to make a choice of a sample by chance from a sampling frame); systematic (a consistent intervals of a sample decided from a sampling frame); stratified random (a sample size gotten by dividing the sampling frame into a number of subsets and then employing simple random or systematic sampling); and lastly cluster (depending on any naturally occurring groupings used pick groups of sample sizes and applying either simple, stratified or systematic sampling in each of the groups) samplings. However, a study that adopts two, more or all of these techniques is termed multi-stage sampling.

The study adopted the simple random sampling to select the six regions in the country within the Southern and Northern sector of Ghana. All six (6) southern regions were written on separate papers and folded into a container shook well and picked three (3) regions out of that. In effect, the Greater Accra, Western and Ashanti regions were selected to represent the southern part of the country. Similarly, same was done to the four (4) Northern regions (Northern, Brong-Ahafo, Upper East and Upper West) and Northern, Brong-Ahafo and Upper East regions well selected. Every region therefore, was given equal opportunity of being selected in the study. However, the study will be generalized to reflect all teachers in Ghana as depicted in figure 3.1.

On the other hand, non-probability sampling suggests that it is likely to generalize from a sample of a population that is not based on statistical grounds. However, it gives no equal representation since elements in the population are always unknown. It is against this background that Saunders, et al., (2009) indicates that it makes research questions difficult to respond to base on statistical inferences especially about the characteristics of the population.

Non-probability sampling necessitates four types of techniques namely: snowball (probing subjects to further recognize similar ones by building contact with one or two subjects in a population under study); convenience (the study that picks subjectively cases which are easy to achieve for the sample); quota (stratified sampling type in which the selection of subjects within the strata is wholly non-random) and purposive or judgmental (picking cases that will best enable a researcher to answer questions that relates to the study objectives) samplings Barnett, (1991).

Convenient sampling technique was used to select all the five hundred (500) respondents for the study. This sampling was used because the researcher gave the questionnaires to teachers who formed the non-validators and Validators (MMDAs, MDA HOD, and non-validators validators) who were available and willing to participate in the study. This was adopted to also help get validators views on the new system, as well as their challenges and benefits. Out of the 500 respondents, four hundred and twenty (420) and eighty (80) teacher respondents answered questionnaires as non-validators and validators respectively across all six regions.

Purposive sampling was also adopted in interviewing six (6) of the CAGD staff to help acquire key information from their department as implementers of the system. Besides, it also helped the study to investigate the general security and privacy of Ghana education employees as far as their salaries information is of concern, the challenges and benefits CAGD encounters with the E-SPV system implementation was also considered.

Table 3.3: ***Categories, number of interviews and the sampling techniques employed.***

Category	**Number of questionnaires/interviews**	**Technique for selection**
Staff	420	Convenient sampling
Validators	80	Convenience sampling
CAGD	6	Purposive sampling
Regions	6	Simple random sampling

Source: ***researcher's construct***

3.4 Sources of Data

Every study employs the collection of either secondary data or primary data. Hussey et al., (1997) explained primary data as first-hand information gathered at its virgin source whereas secondary data is that which already is in existence. In this research, both secondary and primary data were utilized.

3.4.1 Primary Data

In this research the main data instrument used in collecting this type of data were questionnaires and structured interview. Both questionnaires and interviews were used to collect primary data and analyzed by means Statistical Package for Social Sciences (SPSS) and content analysis respectively. The purpose of the questionnaires was to determine the type of EPS adopted by CAGD, explore the challenges faced by employees with the implementation of ESPV and the benefits that come with it. On the other hand, the interview guide was administered purposively to CAG non-validators to determine the type of EPS adopted, explore the implementation process with regards to employees' views, security and privacy of this new system, challenges as well as the benefits that come with the implementation of the E-SPV.

3.4.2 Secondary Data

Secondary data for this study came from both on-line and libraries documents such as databases from the clouds via internet, articles, magazines, journals, books as well as manuals. The Ghana Education Service working manual and documented policy literature were also read for some data. Moreover, EBISCO, Google scholar, Cite Seerx etc. were some of the databases used.

3.4.3 Data Collection Instruments

In view of the nature of the research topic, it was realized that questionnaires and interviews are the most appropriate instrument to use. Various sources of tools were employed in the collection of both primary and secondary to avoid partialities and unreliability. As discussed under 3.4, tools such as; questionnaires and interviews were used. The data collected from all sources were analyzed qualitatively and quantitatively. Arguments based on logical reasoning were used to draw conclusions from the gathered responses and then recommendations made to aid minimize the related challenges of the electronic salary payment voucher system in CAGD and Ghana as a whole. Also, some tables and secondary data analysis and presentation techniques were employed in order to attach meaning to the primary data. Descriptive assessment was used also to support and enhance clarity of the outcomes and facilitate the understanding of the research findings. These enabled easy and clear communication of the huge volume of data collected.

3.4.4. Questionnaire

Wikipedia (2016) defines a questionnaire as a set of questions that is full of behaviors and hints that respondents in a study can tick the suitable hint of his or her judgment or write short answers. Questionnaire was used as a general term to include a techniques of data collection for which each participant was asked to respond to the same set of questions in a predetermined order (de Vaus, 2002) There are two types of question formats thus: open-ended and close-ended questionnaires and the study adopted both. Since questionnaire is an inexpensive way to gather data from a large number of respondents, the researcher gave a serious thought to the wording of individual questions. This was done to ensure that respondents answered objectively to the questions in the questionnaire.

In doing this, two questionnaire types were developed: one for the teachers (non-validators) and the HOD, MMDAs, MDAs etc. (validators) the E-SPV. The study adopted two main type of scale to measure the responses for the two main set of questionnaires: The Likert scale and the nominal were applied. The nominal scale was used to measure respondent socio-demographic variables such as gender, education, marital status, and designation or tenure. The Likert scale consisted of 5-point where 5=strongly agree and 1=strongly disagree. Moreover, both questionnaires consisted of five (5) sections. Section A; was about the respondents profile data. Section B; determine the electronic payment system adopted by the CAGD. Section C: Electronic salary information accessibility by employees; section D; identifies the challenges non-validators and validators face in the electronic salary payment voucher system and Section E; assess the benefits of the electronic salary payment voucher system to employees.

3.4.6. Structured interviews

The structured interviews were collected as first-hand information from CAGD staff in each of the six regions whom shared their expert views on the topic and provided information that is of imperative to the study. The justification for structured interviews was also to ensure that responses from CAGD staff do not swerve from the scope of the study (Williams, et al., 2006). The study interview seek to find out how employees salary information are protected, how they were consulted in the implementation process, the challenges and benefits of the E-SPV so far. These interviews were transcript, examined, cleaned and based on content analysis, analyzed objectively.

3.5 Data Analysis Techniques

Data analysis is concerned with examining, categorizing, and tabulating sources of evidence to address the initial proposition of the study. Analyzing data is an essential component of any survey, but often difficult because the techniques for coding and testing this evidence are the least defined. Before analyzing the data, it was cleaned up to remove possible errors to ensure consistency and accuracy.

Accordingly, the quantitative data were analyzed, summarized, and interpreted with the help of descriptive statistical procedures such as total score and simple percentages. Microsoft Excel and Statistical Package for Social Sciences (SPSS) were used. The scores for all questions were also summed up and the average scored taken. However, the qualitative data from the CAGD staff interview were analyzed by means of content analysis. Content Analysis (CA) is a method that facilitates a systematic and objective means of describing and quantifying issues (Krippendorff, 1980; Downe-Wamboldt 1992; Sandelowski, 1995). Miles and Huberman's, (1994) method of data analysis, with components of; data reduction, data display and drawing of conclusions were applied to the content analysis. Making notes and headings out of the written text (transcribed interviews and documents) was part of the data reduction process.

3.6. Validity and Reliability of Data

3.6.1. Data Validity

Data validity often ensures that the results which are interconnected with the condition are recognized, (Kothari, 2003). Consequently, to help establish the actual findings of the case under study for validity, the researcher administrated two

different kinds of questionnaires to both the Validators and Non-validators and interviewed the CAGD staff, as credible techniques used for effective research

The study initially tested fifty (50) questionnaires on GES employees' of which forty-five (45) were non-validators and five (5) validators and interviewed one CAGD staff using the structure interview on a pilot basis. The pre-tested of the instruments allowed the researcher to improve their validity and familiarize the researcher with the data collection procedure. Secondly the researcher was assisted by her supervisor and that improved the validity of the study.

Accordingly, the quantitative data gathered were analyzed, summarized, and interpreted with the help of scientific statistical procedures such Microsoft Excel, and Statistical Package for Social Scientist (SPSS). However, the qualitative data from the CAGD staff interview were analyzed by means of qualitative content analysis (QCA). These systematic and objective tools make the study consistent and accurate.

3.6.2. Data Reliability

Salkind, (2008), states that the choice of major participant groups that require maximum of the people who can fairly assess the challenges of the electronic salary payment vouchers system in Ghana is held to be representative of the opinions of all other stakeholders as far as responses to the matters under study are concerned. This helped boost, to a large extent, the validity of the information gathered by the study and allows the generalization of the findings. To ensure reliability of the research data, four criteria was employed: 1. Credibility (the researcher in ensuring the credibility of the research provided the sample and responded an accounts of the results so as to authenticate whether the researcher really understood the information provided by the respondents), 2. Dependability (in ensuring dependability of the data

collected, the researcher kept a complete record of all the phases of the study), Furthermore, colleague researchers and supervisors audited the research work so as to ensure that proper procedures are followed, 3. Conformability (the researcher further ensured that personal ethics did not influence the conducts of the research), and 4. Authencity (the study also made sure that the exact view of the respondents was what was recorded).

3.7. Ethical Considerations

First of all, the researcher made sure that permission was sought and the aims and objectives of the study explained vividly to all respondents and their concern seek. Secondly, the researcher explained to respondents that, the study is for academic purposes only and not for any wary use. Respondents who formed part of the study were therefore, those willing to part-take and thus the researcher did not force, beg or persuade anyone under the study. The respondents' rights were respected as their freedom was taken into consideration by the author. Similarly, the researcher ensured that rights and opinions to privacy of respondents by handling the gathered primary data with outmost care (Williams, et al., 2006) and anonymity was also ensured thus the identity of respondents are secured as names are not mentioned in the data gathered. Moreover, the researcher avoided leading questions that beleaguered the respondents. This was done to shun influences of the researcher on respondents' views in the direction of her interest since it is unfavorable and unprincipled to the attainment and understanding any research work.

3.8. Brief history, mission and vision of Ghana Education Service (GES)

The Ghana education service (GES) existence dates back to 1592 and for the past years, Ghana has transformed and reorganized its educational system in response to

demands of new missions and visions. GES was established as a part of the public service of Ghana in the 1974 by NRCD 247 and subsequently amended by NRCD 252,357 and SMCD 63. Consequently, the republic of Ghana under the act of parliament on the 31st of August, 1995 established GES.

The basic mission of GES is to ensure that children of school-going-age enter school to gain quality formal education and training for better life. Its Vision is to create an enabling environment in all educational institutions and management positions that will sustain effective and efficient teaching and learning in schools and promote proper management within GES.

3.8.1 Ghana Education Service Staffing

It is made up of the personnel of GES existing immediately before the act was enacted, teachers and non-teachers who support in pre-tertiary educational institutions in the public sector, managers and supporting staffs of the educational units, persons with post created by or under the enactment and other persons that are employed under it.

The GES is governed by a fifteen-member council called the Ghana education service council. This council consist of a chairman, two distinguished educationists one of whom must be a woman, a representative director from the public service commission, two eminent citizens with a woman, two representatives from the Christian council: the national catholic secretariat and the Pentecostal council of Ghana, a Muslim council and the Ahmadiayya mission representative, Ghana national association of teachers representative, a member of the teachers and educational workers union, a member of the national council for tertiary education, a representative of the association of proprietors of private educational institutions, the

chief director of the ministry of education and the director-general of service. All these persons are appointed by the president in consultation with the council of state. All directors, managers, supervisors, teachers and stakeholders work to promote and improve GES educational standards in Ghana for the past years (GES Act, 506, 1995).

3.8.2 Main activities carried out by GES

Primarily, it is the duty of GES to make sure that all children in Ghana who are old enough to be in school are provided with the best formal education and training. Management of pre-tertiary schools, service conditions, and code of ethics are the mandate of GES, it also sees to the control of recruitment, postings, transfers, promotions, training and development, and study leave with or without pay and all educational activities in the country. Subsequently, it purposively gathers and analyses all educational information for vital decision making, programs and policies review.

The major activities performed by GES include:

i. To oversee the provision of basic, senior secondary, technical and special education in Ghana.

ii. To examine, record, and oversee private pre-tertiary educational activities/institutions to ensure they fall in-line with the regulations/ policies of the country's educational system.

iii. To submit commendations to the minister for educational programs and policies

iv. To encourage and promote the efficacy and complete development of talents among service members

v. To have a list of public teachers and preserve current record of all teachers in the public sector

vi. To take charge of other functions as are subsidiary to the accomplishment of the tasks itemized above and

vii. To uphold the mien of its workforces and professional ethics.

Furthermore, GES agency implements the basic, junior and senior secondary, technical and vocational institutes' educational components. It holds about four-fifths of the annual expenditure on education since it's responsible for all schools in the country. Effective inspection, supervision, monitoring and evaluation of instructional materials, processes and performance of pre-tertiary education also remain a core mandate of the Ghana Education Service (GES Act, 506, 1995).

3.8.3 Electronic Salary Payment Voucher (E-SPV) in GES

In the past, salary payment to GES was strictly manual and very cumbersome. This led to a lot of errors and dissatisfaction such as PVs worked on and distributed to the various MDAs not returning, absenteeism/vacation of post, multiple payments, "ghost names" etc. among civil servants in Ghana. The challenges resulted in weak input controls, absence of validation checks on salary vouchers by Heads of MMDAs, among others. As a solution, the return mechanized voucher system was introduced to solve these problems. Similarly, the return mechanized system also encountered similar challenges as the previous system and more. These made management of payroll very difficult and challenging for the public sector pay master (CAGD). The CAGD of the ministry of finance then took to what it termed E-SPV validation system in 2014 to facilitate payments. Therefore, assessing this new system on GES especially teachers with a predominant rural working population is vital since they

require a very effective and efficient payroll management system to ensure smooth operations of government business. This study however, considers only the teachers under GES and their sample population and sizes in each of the six regions selected are shown in table 3.1 and 3.2 respectively.

A regional map showing the Southern and Northern parts of Ghana

Figure 3.1 ***Map of Ghana***

Source: www-pub.iaea.org

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter presents the analyses and discusses the results of the study in relation to the established specific objectives. Overall, 500 questionnaires were administered to 420 non-validators and 80 validators within the scope of this study. Due to regularly follow-ups and commitment on the part of the researcher all the 500 questions were retrieved, recording unprecedented 100% response rate. In cases where errors were made on the questionnaires a new one was issued to the respondent. The quantitative analyses were conducted with the aid of SPSS and Microsoft excel and the qualitative as content analysis. The quantitative data results were presented using means, standard deviations, frequencies and percentages. The chapter also discusses the E-SPV in view of the non-validator, valitator (teachers) and CAGD (implementers') however; the demographics of both non-validators and valiators (teachers) are discussed together.

4.1 Demographics of teachers

The demographics of both non-validators and validators (teachers) in public schools under the Ghana Education Service (GES) are presented in table 4.1 below. The demographics of the study included the gender, age, educational level, marital status and designation.

The genders of the study are as follow; majority (***non-validators***: N=225, 53.6%) were males while 46.4% were females and majority (***validators***: N=42, 52.5%) were females whereas 47.5% were males. Apropos the age distribution of respondents; 35.7% of respondents belonging to ***non-validators*** were aged between 30-39 followed

by 28.6% who were between the age group 20-29, 25.7% of the respondents were aged between 40-49 with only 10% being 50 years and above and for ***validators*** about 42.5% were aged between 30-39, 38.8% were within the age group 40-49 and finally, 18.8% were within age group 20-29. Regarding the educational levels of respondents (***non-validators***); majority (N=225, 53.6%) of the respondents had degrees, next was diploma accounting for 37.1%, 7.1% of the respondents had their masters with 2.1% holding other qualifications and for ***validators***; majority (N=68, 85%) of the respondents were degrees holders, 11.3% had their master's degree and lastly, 3.8% were diploma holders. The marital status of respondents (***non-validators***) showed that the greater proportion (N=279, 66.4%) of the respondents were married, proceeded by 27.9% who were single, 4.3% were widows/widower with those divorced accounting for 1.4% and for ***validators;*** 65% were married and 35% were single. With Designation of respondents (***non-validators***); a whopping 82.1% were teachers followed by 10% who were headmasters/mistresses, 4.3% reportedly said they were heads of departments, also, 2.1% affirmed that they were Human Resource Managers and lastly, 1.4% belongs to other unspecified categories. This again affirms to the fact that non-heads of departments (HOD) also do validation for salary payment and this sound contrary to the claim by CAGD.

The HODs and Departmental heads *are responsible for the validation of the E-SPV and would be held liable if there is any payment to a staff who absents him/herself from work without any course-(interviewee)*

Also the study reveals that most young teachers see the E-SPV system as convenient and easy to use and affirms same in the age of validators who formed about 82.1%. However, the older respondents see it as difficult to use and thus preferred the old

system to the new. This has led to the reliance of older employees on younger ones to assist them in the validation process or assessing their e-pay slip or information.

Sokobe, (2015) also asserted that variables such as educational level of individual, age and skills influence the acceptance of electronic payment systems and as educational level of an individual increases they are more luckily to embrace IT equipment for easy execution of certain tasks. Bassey, (2008) however, asserted that, it is imperative for entrepreneurs to equip themselves and improve their knowledge in electronic payment systems in order to appreciate and adopt it in their businesses.

Table 4.1: Demographics

Demographics for Non-validators			Demographics for Validators		
Demographics					
	Frequency	**Percent**	**Frequency**	**Percent**	**Total**
Gender					
Male	225	53.6	38	47.5	263
Female	195	46.4	42	52.5	237
Total	420		80		500
Age					
20-29	120	28.6	15	18.8	135
30-39	150	35.7	34	442.5	184
40-49	108	25.7	31	38.8	139
50 and above	42	10.0			42
Total	420		80		500
Educational level					
Diploma	156	37.1	3	3.8	159
Degree	225	53.6	68	85.0	293
Masters	30	7.1	9	11.3	39
Other	9	2.1			9
Total	420		80		500
Marital status					
Married	279	66.4	52	65.0	331
Single	117	27.9	28	35.0	145
Divorced	6	1.4			6
Widow/widower	18	4.3			18
Total	420		80		500
Designation					
Teacher	345	82.1	40	50.0	385
Headmaster/mistress	42	10.0	22	27.5	64
Head of department	18	4.3			18
Human Resource Manager	9	2.1	3	3.8	12
Other	6	1.4	15	18.8	21
Total	420		80		500

Source: Field Survey, 2016

4.2 Mode of salary Payment

Table 4.2; presents the medium on which public teachers receive their salaries through. This was asked to test the knowledge of teachers on the kind of EP system implemented by CAGD.

Of the 100%, 35.7% of the respondents confirmed that they receive their salary through Electronic transfers, 30.7% said they receive their salary through other e-payment system apart from the listed ones, more so, 10% attested to the fact that they receive their salary through Electronic Cash, again, 9.3% receive their salary through Electronic checks, another 7.1% access their salary through E-zwich, 5.7% said they receive their salary through smart cards and the least 1.4% access salary through online credit cards. This implies that e-salary payment is gradually gaining precedence in this current endeavor. Nzaro & Magidi (2014) evaluated the role of electronic payment systems in financial institutions using a case of a Savings Bank in Zimbabwe. Collecting data from 20 employees of savings banks, 40 from their customers and from 5 top managers, the study concluded that, people desire to use the e-payment system but are limited due to lack of knowledge while the banks also suffer from the lack of expertise to handle its operations and educate customers on its benefits. The study affirmed Nzaro & Magidi work since only 30.7% (electronic transfer) answered it right the majority (69.7%) got it wrong indicating their insufficient knowledge in the new system. This was also affirmed in an interview with a CAGD staff.

One interviewee indicated that: through this system, we can now transfer salaries straight to various banks for staffs' payment.

Table 4.2: ***E-payment system salary is received through***

Variables		Frequency	Percent
	Electronic Cash	42	10.0
	E-zwich	30	7.1
	Online credit cards	6	1.4
	Smart cards	24	5.7
	Electronic check	39	9.3
	Electronic transfer	150	35.7
	Others	129	30.7
Total		**420**	**100.0**

Source: Field Survey, 2016

4.3. Electronic salary information accessibility

Table 4.3 used a descriptive statistical technique to evaluate the E-SPV system usage with the responses subjected to (5= strongly agree, 4=agree, 3=neutral, 2=disagree and 1=strongly disagree). With regards to "A technical person support me to use this system" the results showed that 26.4% strongly disagreed with the assertion that they need the support of a technical person to use the system, again, 26.4% of the respondents disagreed to that effect, however, 15.7% of the respondent strongly agreed to the fact that they need the support of a technical person to use the system, also, 11.4% agreed to the assertion and about 10.7% remained neutral. In addition, regarding "I feel very confident using the system", majority (N=111, 26.4%) of respondents agreed to the statement followed by 25.7% who were indifferent to being confident using the system, with 20.7% strongly agreeing to the fact that they feel confident using the system, on the contrary, 10% disagreed and 7.9% strongly disagreed to that effect. Moreover, based on the assertion that "I need to learn a lot of things to get going with this system" 29.3% of the respondents neither agreed nor disagreed, 16.4% of the respondents strongly agreed with 15.7% disagreeing to the statement, 15% strongly disagreed and lastly 14.3 agreed that they need to learn a lot of things to get going with this system. For "The system is complex"; majority

(N=162, 38.6%) were indifferent, 14.3% disagreed with another 14.3% strongly disagreeing to the assertion made but 16.4% think otherwise by strongly agreeing that the system is complex and the least 10% agreed to that effect. Technically, the study found out that majority of teachers on the E-SPV system needs adequate training and knowledge to ease its usage, effectiveness and convenience so as to ensure the security and privacy of their salaries as well as their personal information. Nzaro & Magidi (2014) People are limited due to lack of knowledge on electronic payments while the organizations also suffer from the lack of expertise to handle its operations to educate employees on its benefits. Andrews, also (2004) asserted that people like to touch documents and money in hand and do the process physically and manually. They believe in every dealing and business, physically rather than virtually. He further added that there are many people even in the 21st century, who do not agree and accept all new technologies

Table 4.3: ***Electronic salary information accessibility***

Statements	SA	A	N	D	SD
A technical person support me to use this system	66(15.7)	48(11.4)	45(10.7)	111(26.4)	111(26.4)
I feel very confident using the system	87(20.7)	111(26.4)	108(25.7)	42(10.0)	33(7.9)
I need to learn a lot of things to get going with this system	69(16.4)	60(14.3)	123(29.3)	66(15.7)	63(15.0)
The system is complex	57(13.6)	42(10.0)	162(38.6)	60(14.3)	60(14.3)

Source: Field Survey, 2016

4.4 Security and privacy of employees' information on E-SPV

Table 4.4 below deployed a descriptive statistical method to analyze Security and privacy of employees' information by subjecting it to a series of statement which is measured using a scale of (5= strongly agree, 4=agree, 3=neutral, 2=disagree and 1=strongly disagree) and using frequencies and percentages the results of the study is presented as follows; apropos "It is safe to use the system" 49.3% neither agreed nor

disagreed, 15.7% of the respondents agreed that it was safe to use the system, next was 12.9% who strongly agreed to the assertion with respondents who strongly disagree and disagree accounting for 10% and 7.9% respectfully. More so, with "I am sufficiently informed about security in the E-SPV" majority (N=159, 37.9%) of the respondents strongly disagreeing to that assertion, another 29.3% disagreed with respondents who were neutral and strongly agreed being 10% each and lastly, 7.9% agreed to the assertion. Also concerning "Personal information is secure" half of the respondents were indifferent to the assertion that personal information is secure, next was 15% who agreed to the assertion, this was followed by 10.7% who strongly disagreed to that effect, similarly, and those who disagreed accounted for 9.3% and finally, another 9.3% strongly agreed to it, that personal information is secure. Moving on to the assertion "Can be accessed at all times" 35% of the respondents were neutral, 22.9% of the respondents strongly agreed that the system can be accessed at all times with 15% strongly disagreeing to that effect, 12.1% disagreed and 11.4% agreed to the assertion that the system can be accessed at all times. Though Sokobe, (2015) asserted that it is very imperative for employers to equip themselves and improve their knowledge in electronic payment system in order to appreciate and adopt to any, it is more vital to at least inform employees about any EP which involve them. The study revealed that 182 representing 67.2% of non-validators strongly disagreed or disagreed that they were sufficiently informed about the E-SPV as employees, confirming their insufficient knowledge of the system as indicated above.

However, Ondieki, (2014) found that, though the use of EP has become ubiquitous due to its convenient and how comfortable it is, most people do not use EP at supermarkets and mobile mats. The basis for non-usage was attributed to either forgetfulness of passwords or refusal. Moreover, a more striking reason Ondieki

discovered for non-usage was the fact that people have become aware of e-fraud and hence fear for fraudsters whose intent is to cunningly observe their PIN numbers whereas others shy away from public usage perceiving that they might be charged an exorbitant amount for using it. Affirming the presumptive assumptions of the perceptions above, it was confirmed that employees are charged for every pay slip they print or internet access.

The study however, contradicts with Ondieki since most respondents strongly agreed that, E- SPV is safe when using the system. However, Rouibah, (2015) asserted that, lack of security checks, legal and regulatory backing and internet agreements leads to stolen identity and believes that the EPS system lacks reputation, since authorities can do little about the use of the internet. Moreover, AL-Maaitah, et al., (2015) also asserted that there are security issues concerning Electronic Payment Systems and that one issue that bridges security is encryption and authorization. Again, Olesin, (2006) affirms that with the increasing usage of the Internet, the fears of privacy abuse become a top concern of most of the Internet users therefore; privacy must be regarded as a political right that consumers enjoy and ought to be respected.

One CAGD official during interview also revealed that, *the system is safe to use and it also ensures security. Hence, personal information of employees is secure and can be easily accessed at all times.*

Table 4.4: ***Security and privacy of employees' information***

Statements	SA	A	N	D	SD
It is safe to use the system	54(12.9)	66(15.7)	207(49.3)	33(7.9)	42(10.0)
I am sufficiently informed about security in the E-SPV	42(10.0)	33(7.9)	42(10.0)	123(29.3)	159(37.9)
Personal information is secure	39(9.3)	63(15.0)	210(50.0)	39(9.3)	45(10.7)
Can be accessed at all times	96(22.9)	48(11.4)	147(35.0)	51(12.1)	63(15.0)

Source: Field Survey, 2016

4.5 Challenges of using E-salary payment voucher system

The study explored whether users of the e-payment system faced any challenges and the results in Table 4.5 showed that majority (N=297, 70.7%) of the respondents faced one or more of challenge (s) such as salary delay, difficulty in accessing the internet, lack of computers, inadequate know-how, electricity outages, lack of system infrastructural at workplaces, long distance to assess internet and stolen identity, when assessing electronic pay slip information. while 29.3% reportedly said they face no challenge. Islam (2014) assessed Security Challenges of Mobile Banking and Payments System. The study discovered that in spite of the fact that electronic means of undertaking transaction has gained prominence in these recent times, users however have their own reservations about some of the constraints or challenges associated with the new system. Employees showed satisfaction towards being able to use their mobile phones to do financial transactions and also added that users have more control over their dealings but resented security subsiding owing to the flood of smart phones in the system. Employees argued that with the advancement in technology and growth in applications, the threat of using mobile phones in transacting businesses is increasing at an increasing rate and so is e-fraud. However, in the study, some teachers reveal that they have no modern or compatible phone to

access their information on them so therefore, resort to commercial sources to that effect.

According to Larry (2008), the global networks, credit, debit and charge cards can never avoid the risk of crime entirely". The individual crime victims, merchant service providers and retailers always encountered the conflict of interest. The study supports the views of Larry and Islam as the E-SPV system has it challenges that need to be addressed. Akintoye & Araoye, (2011) also confirmed that the degree of e-fraud ranges from less to severe damage including the extrapolation of peoples' identity and passwords which are most time used as a weapon to blackmail people of high reputation.

Table 4.5: ***Challenges of using E-payment voucher***

Variables		**Frequency**	**Percent**
	Yes	297	70.7
	No	123	21.3
Total		**420**	**100.0**

Source: Field Survey, 2016

4.6 Ways of addressing challenge (s)

From Table 4.6, 33.6% of the respondents asserted that they address challenges regarding the system by themselves, 18.6% affirmed that they consult the service providers, followed by 31.5% who seek help from an internet assistant, another 10% result to friends and families and lastly 6.4% fall on other unspecified means to address the challenge. The study affirms the need for security and privacy check since majority of employees' salary information are exposed to the general public in seeking for redress to a challenge (s) that arises as a result of the implementation of E-SPV. This however, is based on the fact the system lacks the basic infrastructure for effective implementation especially at workplaces. It is also affirmed Taddesse &

Kidan, (2005) that, e-payments infrastructure such as internet and mobile networks are not widely available in Africa. Bassey, (2008) and Issahaku, (2012) asserted Africa governments and stakeholders need to invest heavily in IT infrastructure as well as create a beneficial milieu for operative and resourceful EPS.

Table 4.6: ***Way of addressing challenge (s)***

Variables		**Frequency**	**Percent**
	By myself	141	33.6
	By the service providers	78	18.6
	By a friend/family member	42	10.0
	By an internet cafe assistant	132	31.5
	Others	27	6.4
Total		**420**	**100.0**

Source: Field Survey, 2016

4.7 Duration of addressing challenge

With regards to how fast challenges are addressed Table 4.7 presented the results as follows; the greater proportion (N=249, 59.3%) of the respondents affirmed that it took them two-three days to rectify problem (s), 21.4% reportedly said it depends on the type of challenge, 9.3% said it took less than a day with 6.4% saying challenge (s) took more than a day and finally 3.6% said it lasted for a week or more. This implies that rectification of challenges regarding the system takes several days. The E-SPV however, makes provision for complains/suggestions, contacting CAGD, change of passwords among others. But, due to lack of or inadequate knowledge, infrastructure, and long distance, on the part of non-validators, it takes them longer time or makes them to rely on other sources to address their challenges. Attah-Botchwey, (2014) confirms that EPS facilities placed at secure vantage point in localities can help reduce distance and time in accessing electronic information.

Table 4.7: ***Duration of addressing challenge***

Variables		Frequency	Percent
	Within a day	39	9.3
	more than a day	27	6.4
	2/3 days	249	59.3
	a week or more	15	3.6
	it depends	90	21.4
Total		**420**	**100.0**

Source: Field Survey, 2016

4.8 Frequency of challenges

The study explored the frequency of challenges in using the E-SPV system using a scale of very often, often and rare to measure their frequency rates. From Table 4.8 55% of the respondents reportedly said they often experience salary delays, 22.9% stated that they rarely experience salary delays and 12.1% said they experience salary delays often. Also regarding stolen identity; majority (N=321, 76.4%) of the respondents emphasized that stolen identity in using the e-payment system is rare followed by 10.7% who believe that stolen identity happens often with just 0.7% saying that it happens very often. ". In most African countries the required infrastructure, legal and regulatory framework for electronic payments are lacking (Taddesse & Kidan, 2005). In particular, e-payments infrastructure such as internet and mobile networks are not widely available in Africa. Moreover, banks and other financial institutions are not adequately automated to enable e-banking and e-payment (Kumaga, 2010). This finding affirm Taddesse & Kidan study that, e-payments infrastructure such as internet and mobile networks are not widely available in Africa, since majority often had difficulty in access internet difficulty in access internet. Moving onto difficulty in accessing internet; 51.4% said they often find it difficult in accessing internet, respondents who believe it happen very often followed with 27.1% and 12.9% said it is rare. Apropos Non-availability of computers at work places; the

greater proportion (N=159, 37.9%) of respondents believe that Non-availability of computers at work places is experienced very often with 32.1% reportedly saying it happens often and lastly 17.1% said it rarely occurs. Regarding travelling for a long distance to access internet especially in the northern regions 39.3% reported they rarely travel long distances, moreover, 33.6% said they often travel long distance to access internet with 17.1% saying that very often they walk long distances just to have access to internet. Finally, concerning inadequate know-how on the use of computer by non-validators 47.1% representing the majority said they often have inadequate knowledge in computer usage, 23.6% very often struggle to use computers and only 20.7% is efficient in using computers. Ali and Al-Jabri (2011); Nwaolisa & Kasie, (2012) and Agyeiwaah et al., (2014) asserted that, electronic payments have numerous challenges which make most societies still stick to the old way of transacting business challenges ranges from social, culture, regulatory, erratic power outages, infrastructural and human challenges. Lacks of knowledge and expertise, lower patronage, link failure and point-of-vantage facilities absence, constant breakdown, low level of acceptance and menace were also asserted by Antwi et al., (2015) and Issahaku, (2012). Humphrey et al., (2001) suggest that development of infrastructures alone can support the smooth running of electronic payment systems and offer the opportunity for businesses and individuals to take advantage of it.

According to a senior officer, *the system have problem with internet, and the complains of some employees that they travel long distance to get access to internet and most often are not able to meet the 48 hours period within which the system is opened for validation*.

Another official of CAGD said, *infrastructure has not been provided for any department but HOD, departmental heads and management units were made to*

understand the need for the provision of computers and internets to enable the effective use of the E-SPV system.

Table 4.8: ***Frequency of challenges***

Statement	Very often	Often	Rare
Salary delay	51(12.1)	231(55.0)	96(22.9)
Stolen identity	3(0.7)	45(10.7)	321(76.4)
Difficulty in access internet	114(27.1)	216(51.4)	54(12.9)
Non-availability of computers at work places	159(37.9)	135(32.1)	72(17.1)
Long distance travelling to assess internet	72(17.1)	141(33.6)	165(39.3)
Inadequate know-how on the use of computer by non-validators	99(23.6)	198(47.1)	87(20.7)

Source: Field Survey, 2016

4.9 Desiring to stop using electronic payment voucher due to the challenges

From Table 4.9 a whopping 70.7% asserted that they do not wish to stop using the electronic payment voucher in spite of the challenges they come with due to the fear of losing their salary, its convenience, easy to use and the cost effectiveness of it. However, 24.3% accepting that they wish to stop using the electronic payment voucher due to the numerous challenges associated with it. This implies that the electronic payment system is gaining wide range acceptance despite the challenges experienced by users. However, Rouibah, (2015) asserted that individuals who used EPS have shown satisfaction toward the usage of the system. Moreover, individuals and groups using the EPS revealed that they will continue to use it for the next one year but would not hesitate to find an alternative EPS when encountering problem with one.

On the contrary Harris et al., (2011) believes that, the electronic system of transaction using credit cards, debit cards, e-zwich, electronic cheques and the likes are sluggish and that people prefer the formal system. Andrew (2004) however suggests that,

malfunctions, fraud and unavailability of devices in the time of need makes it very hard for people to believe, accept and use a technology.

Table 4.9: ***Desiring to stop using electronic payment voucher due to the challenges***

Variables	Frequency	Percent
Yes	123	29.3
No	297	70.7
Total	**420**	**100.0**

Source: Field Survey, 2016

4.10 Benefit of electronic payment system

Table 4.10 presented the benefits for using the e-payment system and the findings revealed that 47.9% of the respondents believe that there was really no security using the e-payment system, 31.4% on the other hand, believes that there was enough security and 16.4% thinks there were no security at all when using the system. Moreover, the results of availability of infrastructural system at work places showed that a whopping 72.1% believes there was completely no infrastructures to support the e-payment system, 12.1% think otherwise with 11.4% saying that there were infrastructures but they were not enough. Just as demand influences supply, so does payment also influence the means through which money should be paid and this leads to developing convenient ways to satisfy employees. The use of e-payment system has a positive impact on the economic growth and contributes immensely to GDP per capita. Among all the electronic payment systems, ATMs is the most contributors to economic development whereas others showed otherwise. In view of this the researcher believes that future advances in establishing a cashless society should put economic development first (Oyewole et al., 2013)

Also the results of having a reliable system revealed that 57.9% thinks the system was reliable, another 25% believes the opposite is true with only 12.9% saying the system

was somewhat reliable. More so, the outcome of the Accessibility to pay slip information was as follows majority (N=369, 87.9%) of the respondents believe that the system was available at all times to access pay slip, 4.3% accepted that the information on pay slip was not really accessible and 3.6% opposite was true. In furtherance, the results of the system being easy to use were; 45.7% accepted that the system was easy to use, 32.9% believes the system was somehow easy to use and 17.9% disagreed to the assertion. Adding to that, the results of the system being cost effective were presented as follows; the majority (N=195, 46.4%) agreed that the system was cost effect, 27.1% believes it was somehow cost effective and lastly 22.1% believes it was not cost effective. Finally, regarding the convenience of its usage about 65% affirmed that it is convenient, 17.1 said it is somehow convenient and the least 13% objected to the assertion that it was convenient. Sokobe, 2015 asserted that, having immense skills and likeness in IT is only natural to allow that person the luxury to easily adapt to electronic task performing materials. He explained that, when the system is easy to use in terms of speed, convenience and storage it enhances acceptance among the masses. Furthermore, he affirms that, affordability in installing the system helps promote the spread of the system usage since they deal with the informal sector which takes about 70% of businesses in developing countries. Getembe et al., (2013) also accepted that there are some benefits associated to the electronic payment system regarding the avoidance of long queues, low cost and others. Al-Adwan et al., (2013) also asserted that EPSs are more convenient, cost effective, enhances prowess and ensures security. USAID paper (2014), identified that a firm that adopts an e-transaction means, improves accessibility to financial services, create an enabling bionetwork for value-added and business services for recipients payment, cost saving and efficiency, increases

transparency, it also diminishes the siphoning of funds, waste, and security risks to program employees and accomplices. The paper further outlines that e-payment platforms empower entrepreneurs, quicken and advance accountability, fiscal inclusion, and unlock the private sector. Shaikh, (2014) added that, EPS reduces inconveniences and takes care of HR requirements.

An officer indicated during that, *the electronic payment system is of economic value since it is cost effective, reliable, and easy to use and ensures security of personal information of employees*.

Table 4.10 ***Benefit of electronic payment system***

Statement	**Yes**	**No**	**Not really**
Security in terms of it usage	132(31.4)	69(16.4)	201(47.9)
Availability of infrastructural system at work places	51(12.1)	303(72.1)	48(11.4)
Reliability of system	243(57.9)	54(12.9)	105(25.0)
Accessibility to pay slip information	369(87.9)	15(3.6)	18(4.3)
It is easy to use	192(45.7)	75(17.9)	138(32.9)
It is cost effective	195(46.4)	93(22.1)	114(27.1)
It is convenient to use	273(65.0)	57(13)	72(17.1)

Source: Field Survey, 2016

4.11 Relative Important Index (RII) on E-SPV system usage

Table 4.11 deployed a descriptive statistical method to evaluate the Electronic system usage by subjecting it to a series of statement which were measured using a Likert Scale of (5= strongly agree, 4=agree, 3=neutral, 2=disagree and 1=strongly disagree) to generate central tendencies of means (M), standard deviations (SD) and relative important index (RII). Apropos "I feel very confident using the system" responses gathered recorded a (M=3.46, SD=1.20 and RII=0.63) which rendered it a low important index; regarding "I need to learn a lot of things to get going with this system" the results obtained a (M=3.02, SD=1.31 and RII=0.55) which is less significant; moreover with respect to "The system is complex" the results achieved a

(M=2.94, SD=2.60 and RII=0.53) which was also less significant and finally "A technical person support me to use this system" obtained a (M=2.60, SD=1.46 and RII=0.47) making it also less significant. This study reveals that employees need adequate training on how to use the system. This study from the revealing results also concludes that employees' of GES were not properly included or adequately informed in the design and implementation of the new system. Chibueze, (2006), also asserted that, every new technology, when exposes and comes to the public, it faces so many difficulties and it takes time for people to get familiar with it and explained that most of equipment of e-transactions is expensive and not easy and simple to anybody to apply them.

Table 4.11 ***RII on Electronic system usage***

Statement	M	SD	RII	Rank	RII index
I feel very confident using the system	3.46	1.20	0.63	1st	Low important
I need to learn a lot of things to get going with this system	3.02	1.31	0.55	2nd	Low important
The system is complex	2.94	2.60	0.53	3rd	Low important
A technical person support me to use this system	2.60	1.46	0.47	4th	Low important

Source: Field Survey, 2016. *To measure the relative importance of each factor or variable used, indices of range 0.85-1.00= High important; 0.65-0.84= Medium important; 0.00-0.64=Low important.*

4.12 Relative Important Index (RII) on Security and privacy of employees' information

Table 4.12 adopted a descriptive statistical method to analyze Security and privacy of employees' information by subjecting it to series of statements which were measured using a scale of (5= strongly agree, 4=agree, 3=neutral, 2=disagree and 1=strongly disagree) and using the results to compute for means (M), standard deviations (SD)

and relative important index (RII) with indices of range 0.85-1.00= High important; 0.65-0.84= Medium important; 0.00-0.64=Low important. The results of "the system being accessed at all times" had a (M=3.16, SD=1.34 and RII=0.60) rendering it less important, "It is safe to use the system" recorded (M=3.14, SD=1.09 and RII=0.42) which was also low important, also with "Personal information being secured" it recorded a (M=3.03, SD=1.05 and RII=0.57) which was also low important and finally with "I am sufficiently informed about security in the E-SPV" the assertion had (M=2.19, SD=1.32 and RII=0.61) which was low important. This means that though employees information can easily be assessed, majority of teachers were not sufficiently informed about the E-SPV and thus makes some believe their information is not safe and it's not safe using it either. Ayodele, (2015) asserted that abuse of client and the lack of customer care when individuals hinders the wider spread of EPS usage.

Table 4.12 ***RII on Security and privacy of employees' information***

Statement	M	SD	RII	Rank	RII index
Can be accessed at all times	3.16	1.34	0.60	2nd	Low important
It is safe to use the system	3.14	1.09	0.42	4th	Low important
Personal information is secure	3.03	1.05	0.57	3rd	Low important
I am sufficiently informed about security in the E-SPV	2.19	1.32	0.61	1st	Low important

Source: Field Survey, 2016*. To measure the relative importance of each factor or variable used, indices of range 0.85-1.00= High important; 0.65-0.84= Medium important; 0.00-0.64=Low important. Where M=Mean, SD=Standard Deviation.*

4.13 Frequency of challenges

A descriptive statistical method was adopted to evaluate the Frequency of challenges when using an electronic payment in Table 4.13 and to achieve the desired results series of statement were used and were measured using a five point Likert Scale of (5= strongly agree, 4=agree, 3=neutral, 2=disagree and 1=strongly disagree) to

generate central tendencies of means (M) and standard deviations (SD). Regarding "Stolen identity" it recorded a (M=2.89, SD=0.52), moreover "Long distance travelling to assess internet" had (M=2.25, SD=0.75), more so "Salary delay" obtained (M=2.12, SD=0.61), moving on "Inadequate know-how on the use of computer by non-validators" had a (M=1.97, SD=0.69), again "Difficulty in assess internet" recorded (M=1.84, SD=0.64) and lastly "Non-availability of computers at work places" obtained a (M=1.76, SD=0.76). The study clearly indicates that the system was implemented with the provision of equipment, training or ideas of the teacher in mind. This has led to making majority of them especially those in the rural areas to travel long distances to access and print-out their pay slips and others thereby increasing their risk to insecurity and no privacy. EFFC, (2014) asserted that customers prefer to keep the detail of their transactions private.

Table 4.13: ***Frequency of challenges***

Statement	Mean	Std. Dev.
Stolen identity	2.89	0.52
Long distance travelling to assess internet	2.25	0.75
Salary delay	2.12	0.61
Inadequate know-how on the use of computer by non-validators	1.97	0.69
Difficulty in assess internet	1.84	0.64
Non-availability of computers at work places	1.76	0.76

Source: Field Survey, 2016*. Where Std. Dev. = Standard Deviation*

4.14 Benefits of the E-SPV system frequency

A descriptive statistical method was adopted to evaluate the Benefit of using the electronic payment system in Table 4.14 and to achieve the desired results series of statement were used and were measured using a five point Likert Scale of (5= strongly agree, 4=agree, 3=neutral, 2=disagree and 1=strongly disagree) to generate central tendencies of means (M) and standard deviations (SD). With regards to "Security in terms of it usage" it recorded a (M=2.17, SD=0.89), in addition

"Availability of infrastructural system at work places" had a (M=1.99, SD=0.49), in furtherance "It is easy to use" obtained a (M=1.87, SD=0.89), "It is cost effective" also recorded a (M=1.79, SD=0.85), "Reliability of system" obtained a (M=1.66, SD=0.86), "It is convenient to use" had a (M=1.50, SD=0.78) and finally "Accessibility to pay slip information" recorded a (M=1.13, SD=0.45).

Shaikh (2014) in trying to understand the perception of bankers about the electronic payment system, they commented that its saves time and unnecessary queues, it reduces risk; it also reduces inconveniences and takes care of HR requirements.

An officer at CAGD affirmed this and said, *the implementation of E-SPV has reduced risk of having to various regions, municipalities, districts, departments and offices with manual vouchers. The interviewee explains that "it has also reduced cost in transportation, printing, ghost names and time spent working on the voucher. Furthermore, approved vouchers are received prior to salary payments" .interviewee concluded*

Table 4.14: ***Benefit of electronic payment system frequency***

Statement	Mean	Std. Dev.
Security in terms of it usage	2.17	0.89
Availability of infrastructural system at work places	1.99	0.49
It is easy to use	1.87	0.89
It is cost effective	1.79	0.85
Reliability of system	1.66	0.86
It is convenient to use	1.50	0.78
Accessibility to pay slip information	1.13	0.45

Source: Field Survey, 2016. *Where Std. Dev. = Standard Deviation*

4.15 Perspective of Validators

Perspective of validators explains the views of teachers who approve for the payment of staff salaries, their challenges and benefits visa-vie the CAGD perspective.

Table 4.15 presented the Kind of E-payment system used to receive salary and accordingly; majority (N=46, 57.5%) reportedly said they receive their salary through electronic transfers, another 20% uses electronic checks, also 10% confirmed that they receive their salary through electronic cash, more so 8.8% receive their salary through other unspecified channels and the least 3.8% receive theirs through smart cards. The study reveals that more than 42.5% of the validators do not know the exact medium of salary which passes through. Consequently, there is the need for adequate and effective education and training on the system. Andrews, also (2004) asserted that people desire to use the e-payment system but are limited due to lack of knowledge people desire to use the e-payment system but are limited due to lack of knowledge.

Table 4.15: ***Kind of E-payment system used to receive salary***

Variables	Frequency	Percent
Electronic Cash	8	10.0
Smart cards	3	3.8
Electronic check	16	20.0
Electronic transfer	46	57.5
Others	7	8.8
Total	**80**	**100.0**

Source: Field Survey, 2016

4.16 Time duration for validating employees' salary information for payment

Table 4.16 presented the results of time duration for validating employees' salary information for payment. The results indicated that about 57.5% of the respondents spend 1-30 minutes; similarly, 38.8% spends 31-60 minutes and the least 3.8% uses more than 2 hours. The study reveals that while employee spend time and money in the validation process, the employer (government) is possible to loss productivity

since quality of this time spent by teachers are during working hours and this involves travelling long distances to validate or access salaries information or do print-outs within the 48 hour period.

Table 4.16: ***Time duration for validating employees' salary for payment***

Variables		Frequency	Percent
	1 to 30 minutes	46	57.5
	31-60 minutes	31	38.8
	More than 2 hours	3	3.8
Total		**80**	**100.0**

Source: Field Survey, 2016

4.17 Validating after the required time

Regarding whether validators are able to validate after the required time, Table 4.17 showed that majority (N=77, 96.3%) of the respondents reported that they are not allowed to validate after the required and 3.8% said they have that privilege to validate after the required time.

An official of CAGD said *validators cannot validate after 48 hours period given and ... for that month all salaries under that particular unit or department will not be paid*

Table 4.17: ***Validating after the required time***

Variables		Frequency	Percent
	Yes	3	3.8
	No	77	96.3
Total		**80**	**100.0**

Source: Field Survey, 2016

4.18 Needing expertise to validate

Table 4.18 presented the need for any expertise in order to validate and overwhelmingly 91.3% confirmed that they need special skills and training in order to carry out validation and just 8.8 out of the whole said they need no special skills. The study reveals that the 8.8% are head of departments who have inadequate knowledge

in validation process and are mostly those within the ages of 50 and above. Chibueze, (2006) asserted that most equipment of e-transactions are expensive and not easy and simple to anybody to apply them.

Table 4.18: ***Needing expertise to validate***

Variables		Frequency	Percent
	Yes	73	91.3
	No	7	8.8
Total		**80**	**100.0**

Source: Field Survey, 2016

4.19 Place of Validation

Apropos the place where validators do their validation Table 4.19 shows that the greater proportion (N=40, 50%) of the respondents use their own laptops, another 31.3% visit the internet café, with 10% using their phones, again, 5% reportedly said they use school ICT labs and finally 3.8% use office laptops. Larry (2008) asserted that a major problem for business and organizations today is the struggle to remain competitive in a global marketplace, and because of the business complexity, systems are left open to employee manipulation and without a finely tuned internal control system, and the opportunity for significant loss is always present

Table 4.19: ***Place of validation***

Variables		Frequency	Percent
	Phone	8	10.0
	Internet café	25	31.3
	School ICT lab	4	5.0
	My laptop	40	50.0
	Office computer	3	3.8
Total		**80**	**100.0**

Source: Field Survey, 2016

4.20 Printing document after validation

Concerning the printing of documents after validating Table 4.20 shows that 85% of the respondents accepted they do print validated documents after they are done with validation and 15% said they do no printing of documents after validation. Olesin (2006) asserted that privacy is a political right that employees enjoy and ought to be respected. The study fundamentally revealed that the more the cost of transacting the business, the more the customer pays. Hence, the more paper works are involved, the more you pay asserted by Humphrey et al., (2001). Though the study revealed that most teachers use laptops, office computers, school ICT, and phones for validation, 85% confirmed doing their print-out at commercial sources signifying that infrastructures for this system are woefully inadequate and hence little or no privacy.

Table 4.20: ***Printing document after validation***

Variables	Frequency	Percent
Yes	68	85.0
No	12	15.0
Total	**80**	**100.0**

Source: Field Survey, 2016

4.21 Place of Printing

The study explored the place where validators do the printing after the validation and Table 4.21 indicated that 50% of the respondents visit the café to print the validated documents, followed by 36.3% who print it at their office and 13.8% uses commercial centers for printing their validated documents. This confirms that majority of teachers lack equipment for adequate adaption of the new system. The study also revealed that printing outside the office with such relevant documents creates inconveniences and staffs of GES lack their privacy. Chibueze, (2006) asserted that new EPS should invent many things and prepare adequate basis for expansions of it.

Table 4.21: ***Place of printing***

Variables		Frequency	Percent
	Internet cafe	40	50.0
	Commercial centers	11	13.8
	Office	29	36.3
Total		**80**	**100.0**

Source: Field Survey, 2016

4.22 Incurring cost in E-SPV validation

The study inquired whether validators incur any cost in the process of validation and as such Table 4.22 revealed that a whopping 83.8% said they incur some level of cost in the process of validation and that they spend at least GH¢5 every month and about 16.3% said they do not incur any cost during validation. These differences occurred as a result of the lack of regulatory policy on who should and should not incur cost, where to print and how much should be spent. Larry, (2008) asserted that, there are several internal forces which can make electronic transaction fraud more likely to prevail in the organization, such as poor internal controls, poor personnel policies and practices, and lack of honesty at the top levels of management.

Table 4.22: ***Incurring cost in E-SPVvalidation process***

Variables		Frequency	Percent
	Yes	67	83.8
	No	13	16.3
Total		**80**	**100.0**

Source: Field Survey, 2016

4.23 Cost bearer

Table 4.23 presented the results of who bears the cost of validation as follows; majority (N=41, 51.3%) stated that the cost is paid by the staff, flowed by 28.8% of the respondents who said the cost is paid by the HOD 10% of the respondents said they themselves take responsibility in paying the cost and lastly 2% indicated other sources. These results suggest that most staffs bare cost now in the validation process

of which their Human Resource department (CAGD) has implemented. However, in an interview with CAGD staff (implementers) reported to have reduced cost drastically. The study concludes therefore that the E-SPV implementation somehow has shifted cost from the CAGD to staff. Humphrey et al., (2001) also suggest that EPS can be promoted through the use of incentives like using less charges for electronic means of transacting business.

Table 4.23: ***Cost bearer***

Variables		**Frequency**	**Percent**
	Non-validators	41	51.3
	Myself	8	10.0
	HOD	28	36.8
	Others	3	2.0
	Total	**67**	**83.8**
Total		**80**	**100.0**

Source: Field Survey, 2016

4.24 Challenges occurring validating E-SPV system

Table 4.24 adopted a descriptive statistical method to evaluate the Challenges that occurs in using the e-payment vouchers and to achieve the desired results series of statement were used and measured using a five point Likert Scale of (5= strongly agree, 4=agree, 3=neutral, 2=disagree and 1=strongly disagree) to generate central tendencies of means (M) and standard deviations (SD). "Non-availability of the machines at work place" "obtained a (M=2.16, SD=0.74), "Inadequate validation time period" had (M=2.05, SD=0.59), "Electricity/Power outages" recorded a (M=1.87, SD=0.680), "Difficulty in access internet" obtained a (M=1.81, SD=0.51) and finally Inadequate know-how" scored a (M=1.76, SD=0.60). The study also realized that majority of validators face infrastructural problems confirming the results of the non-validators and the CAGD. Larry (2008), affirms that' the global networks, credit, debit and charge cards can never avoid the risk of crime entirely and that, the

individual crime victims, merchant service providers and retailers always encountered the conflict of interest. Islam, (2014) discovered that in spite of the fact that electronic means of undertaking transaction has gained prominence in these recent times, users however have their own reservations about some of the constraints or challenges associated with the new system. However, Kaur & Rajneesh (2014) thinks that with the inevitable breakdowns of service servers, slow running of networks, malfunctions and others identified with EPSs leave room for more improvement to avert these challenges faced.

Table 4.24: ***Challenges occurring in validating E-SPV system***

Statement	**Mean**	**Std. Dev.**
Inadequate know-how	2.16	0.74
Non-availability of machines at work places	2.05	0.59
Electricity/power outage	1.87	0.68
Difficulty in accessing internet	1.81	0.51
Inadequate validation time period	1.76	0.60

Source: field survey, 2016

CHAPTER FIVE

SUMMARYOF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of findings, conclusion and recommendations of the study. Specifically, the following objectives are important in this study; forms of electronic payment salary system, challenges of electronic payment salary system and benefits of electronic payment salary system. Moreover, for validity and reliability purposes, the researcher adopted a two perspectives approach into the study. Namely: the perspectives of non-validators and perspective of the validators representing teachers in GES.

5.1 Summary of Findings (Perspective of the Teachers)

5.1.1 E-payment system salary is receive through

The study reported that 35.7% of the respondents answered they receive their salary through Electronic transfers, also, 30.7% reportedly said they receive their salary through other e-payment system apart from the listed ones, more so, 10% attested to the fact that they receive their salary through Electronic Cash, again, 9.3% receive their salary through Electronic checks, another 7.1% access their salary through E-zwich, 5.7% said they receive their salary through smart cards and the least 1.4% access salary through online credit cards.

5.1.2 Electronic salary information accessibility

Available evidence from the study revealed that 26.4% strongly disagreed with the assertion that they need the support of a technical person to use the system, again, 26.4% of the respondents disagreed to that effect, however, 15.7% of the respondent

strongly agreed to the fact that they need the support of a technical person to use the system, also, 11.4% agreed to the assertion and about 10.7% remained neutral. In addition, regarding "I feel very confident using the system", majority (N=111, 26.4%) of respondents agreed to the statement followed by 25.7% who were indifferent to being confident using the system with 20.7% agreeing to the fact that they feel confident using the system, on the contrary, 10% disagreed and 7.9% strongly disagreed to that effect. Moreover, based on the assertion that "I need to learn a lot of things to get going with this system" 29.3% of the respondents neither agreed nor disagreed, 16.4% of the respondents agreed with 15.7% disagreeing to the statement, 15% strongly disagreed and lastly 14.3 agreed that they need to learn a lot of things to get going with this system. For "The system is complex"; majority (N=162, 38.6%) were indifferent, 14.3% disagreed with another 14.3% strongly disagreeing to the assertion made but 16.4% think otherwise by strongly agreeing that the system is complex and the least 10% agreed to that effect.

5.1.3 Security and privacy of employees' information on E-SPV

The study found out information regarding the security and privacy of employees information as follows; 49.3% neither agreed nor disagreed to the statement "It is safe to use the system", 15.7% of the respondents agreed that it was safe to use the system, next was 12.9% who strongly agreed to the assertion with respondents who strongly disagree and disagree accounting for 10% and 7.9% respectfully. More so, with "I am sufficiently informed about security in the ESPV" majority (N=159, 37.9%) of the respondents strongly disagreeing to that assertion, another 29.3% disagreed with respondents who were neutral and strongly agreed being 10% each and lastly, 7.9% agreed to the assertion. Also concerning "Personal information is secure" half of the respondents were indifferent to the assertion that personal information is secure, next

was 15% who agreed to the assertion, this was followed by 10.7% who strongly disagreed to that effect, similarly, those who disagreed accounted for 9.3% and finally, another 9.3% strongly agreed to the that personal information is secure. Moving on to the assertion "Can be accessed at all times" 35% of the respondents were neutral, 22.9% of the respondents strongly agreed that the system can be accessed at all times with 15% strongly disagreeing to that effect, 12.1% disagreed and 11.4% agreed to the assertion that the system can be accessed at all times.

5.1.4 Challenges of using E-salary payment voucher

The study explored whether users of the e-payment voucher faced any challenges and the results showed that majority (N=297, 70.7%) of the respondents faced a challenge when using the e-payment voucher while 21.4% reportedly said they face no challenge. From the survey 33.6% of the respondents asserted that they address challenges regarding the system by them, 18.6% affirmed that they consult the service providers, followed by 15% who seek help from an internet assistant, another 10% result to friends and families and lastly 6.4% fall on other unspecified means to address the challenge. With regards to how fast the challenge was addressed, majority (N=162, 38.6%) of the respondents affirmed that it took them two-three days to rectify the problem, 21.4% reportedly said it depends on the type of challenge, 9.3% said it took less than a day with 6.4% saying the challenge took more than a day and finally 3.6% said it lasted for a week or more. This implies that rectification of challenges regarding the system takes several days.

5.1.5 Frequency of challenges

More than half (55%) of the respondents said they often experience salary delays, 22.9% stated that they rarely experience salary delays and 12.1% said they experience salary delays often. Also regarding stolen identity; majority (N=321, 76.4%) of the respondents emphasized that stolen identity in using the e-payment system is rare followed by 10.7% who belief that stolen identity happens often with just 0.7% saying that it happens very often. Moving onto difficulty in accessing internet; 51.4% said they often find it difficult in accessing internet, respondents who belief it happen very often followed with 27.1% and 12.9% said it is rare. Apropos Non-availability of computers at work places; the greater proportion (N=159, 37.9%) of respondents believe that Non-availability of computers at work places is experienced very often with 32.1% reportedly saying it happens often and lastly 17.1% said it rarely occurs. Regarding travelling for a long distance to access internet 39.3% reported they rarely travel long distances, moreover, 33.6% said they often travel long distance to access internet with 17.1% saying that very often they walk long distances just to have access to internet. Finally, concerning inadequate know-how on the use of computer by non-validators 47.1% representing the majority said they often have inadequate knowledge in computer usage, 23.6% very often struggle to use computers and only 20.7% is efficient in using computers. Moreover, the study revealed that about 70.7% do not wish to stop using the electronic payment voucher in spite of the challenges they come with and 24.3% accepting that they wish to stop using the electronic payment voucher due to the numerous challenges associated with it. This implies that the electronic payment system is gaining wide range acceptance despite the challenges experienced by users.

5.1.6 Benefit of electronic payment system

The study found that 47.9% of the respondents believe that there were really no security using the e-payment system, 31.4% on the other hand believes that there was enough security and 16.4% thinks there was no security at all when using the system. Moreover, the results of availability of infrastructural system at work places showed that a whopping 72.1% believe there was completely no infrastructures to support the e-payment system, 12.1% think otherwise with 11.4% saying that there were infrastructures but they were not enough. Also the results of having a reliable system revealed that 57.9% thinks the system was reliable, another 25% believes the opposite is true with only 12.9% saying the system was somewhat reliable. More so, the outcome of the Accessibility to pay slip information was as follows majority (N=369, 87.9%) of the respondents believe that the system was available at all times to access pay slip, 4.3% accepted that the information on pay slip was not really accessible and 3.6% opposite was true. In furtherance, the results of the system being easy to use were; 45.7% accepted that the system was easy to use, 32.9% believes the system was somehow easy to use and 17.9% disagreed to the assertion. Adding to that, the results of the system being cost effective were presented as follows; the majority (N=195, 46.4%) agreed that the system was cost effect, 27.1% belief it was somehow cost effective and lastly 22.1% believes it was not cost effective. Finally, regarding the convenience of its usage about 65% affirmed that it is convenient, 17.1 said it is somehow convenient and the least 13% objected to the assertion that it was convenient.

Perspective of Validators

Majority (N=46, 57.5%) reportedly said they receive their salary through electronic transfers, another 20% uses electronic checks, also 10% confirmed that they receive their salary through electronic cash, more so 8.8% receive their salary through other unspecified channels and the least 3.8% receive theirs through smart cards. Majority (91.3%) validates their employees' salary information for payment at the end of every month and only 8.8% do so at the middle of the month.

The findings indicated that about 57.5% of the respondents spend 1-30 minutes; similarly, 38.8% spends 31-60 minutes and the least 3.8% uses more than 2 hours. Concerning the time period required for validation was explored and a whopping 81.3% reportedly said they have time duration of 2 days, next was 10% who said they have a day and 8.8% confirmed they have 4 days to validate.

Majority (N=77, 96.3%) of the respondents reported that they are not allowed to validate after the required and 3.8% said they have that privilege to validate after the required time. Overwhelmingly 91.3% confirmed that they need special skills and training in order to carry out validation and just 8.8% out of the whole said they need no special skills. The results showed that the greater proportion (N=40, 50%) of the respondents use their own laptops, another 31.3% visit the internet café, with 10% using their phones, again, 5% reportedly said they use school laptops and finally 3.8% use office laptops.

Concerning the printing of documents after validating the pay slips of validators Table 4.8 showed that 85% of the respondents accepted they do print validated pay slips after they are done with validation and 15% said they do no printing of documents after validation. The study reported that 50% of the respondents visit the café to print

the validated documents, followed by 16.3% who print it at their office and 13.8% uses commercial centers for printing their validated documents.

The study inquired whether validators incur any cost in the process of validation and as such revealed that a whopping 83.8% said they incur some level of cost in the process of validation and that they spend at least GH¢5 every month and about 16.3% said they do not incur any cost during validation.

Majority (N=41, 51.3%) stated that the cost is paid by the teachers, flowed by 22.5% of the respondents who said the cost paid by the HOD and lastly 10% of the respondents said they themselves take responsibility in paying the cost. Majority (N=76, 32.3%) of the respondents said they struggle with stolen identity followed by 31.5% of the respondents who said there are inadequate know-how on the use of computer by non-validators, another 30.6% said they have difficulty in accessing the internet and about 5.5% said they experience salary delays.

5.2 Conclusions

Answering study Objective 1: "Determining the electronic payment system adopted by the public sector". The study concludes that the electronic salary payment voucher is one out of many electronic means of payment adopted under the Ghana Educational Service (GES). There are other channels such as Electronic Cash, E-zwich, online credit cards, Smart cards, Electronic check, Electronic transfers and others. The growth of technology has perpetuated the electronic payment systems in Ghana. With the predisposition to electronical gadgets such as smart phones, iPad, laptops and others, migrating to electronic world is easy.

Answering study Objective 2: "Identifying the challenges employee face in the electronic salary payroll voucher". The study concluded that teachers within the educational sectors are indeed faced with an avalanche of challenges prominent among them are fluctuations in the power system which is one challenge in Ghana. This leads to delays in validation of teachers' slips and in the worse scenario, it leads to non-payment of their remuneration for the month in question. The study further concludes that lack of adequate knowledge in the handling of electronic applications has resulted in the mal-handling of e-salary information and e-pay vouchers. This has led to stolen identity where people use the codes of others to access their pay information. Also because the validation period is time bound and beyond that time period accessing the system becomes impossible hence any other alternative means used to access pay causes undue delays in receiving salary.

Moreover, logistics is another challenge facing teachers and validators under the GES. Most schools under the GES lacks logistical equipment like computers and internet services to validate workers' pay voucher and due to that, they have to walk long distance to access internet services mostly at cafes which increases their risks level when third parties get hold of their PIN codes. In addition, these services are offered for a fee which is paid by the teachers own money without any refund and in some cases they rely on mobile phones to validate.

Another challenge teachers reported was the fact that the E-SPV is unfriendly to the visually impaired. Teachers in this situation rely on friends, colleagues or commercial sources to help them with this system thus exposing their information and risking their transactions on the system.

Answering study Objective 3: "Assessing the benefits of the electronic payroll voucher system". Based on the available evidence, the researcher can confidently concludes that electronic payment system in spite of its myriad of challenges allows teachers the luxury to access their pay in a more convenient way by accessing their pay slip information at all time. Also pay information can be accessed at any time even during weekends. Also, it can be concluded that security in terms of using the e-payment system is assured. That is, the incidence of physical assault for the purpose of theft is rare and the mere fact of not carrying cash removes the psychological alertness to be self-conscious at all times. The benefits of the study can be concluded that it is easy to use, cost effective and convenient.

5.3 Recommendations

The following recommendations are made based on the findings which are in line with the objectives of the study.

5.3.1 Sensitization of teachers on E-SPV

Teachers showed general knowledge on the E-SPV. However, majority of them do not know the exact kind of EPS being implemented. This study therefore, recommend that employees should be sensitized on the adoption, utilization as well as the benefits of electronic payment voucher system based on its cost effective, ensuring security of personal information, reliability, and affluence of use, convenience and accessibility of information. Government in collaboration with departmental heads should do this by discussing with teachers the importance of E-SPV during their meetings and gathering.

5.3.2 Policy formulation

The E-SPV has come with relief, convenience and ease teachers access to their salary information. However, myriad of challenges hinder the effective and efficient usage of the system. Consequentially, the system will be more effective if CAGD formulate policies to curb challenges associated with the use of electronic salary payment vouchers by providing the technical know-how on how to overcome power outages, non-availability of machines and difficulties in internet accessibility for all teachers. Moreover, checks should be made on E-SPV systems' frequencies and on how to develop a strategy to counter stolen identity, salary delay and other related problems face by teachers.

5.3.3 Involvement of teachers

The study correspondingly found out that most teachers were not pre-informed or their ideas were not sort prior to E-SPV implementation. In this regard, the study suggest that GES especially teachers must be consulted and regularly educated on the electronic salary payment voucher system for their inputs or views to enable them deal with some of the fundamental problems associated with the system.

5.3.4 Collaboration of government and service providers

Last but not the least, the current internet infrastructure in the country does not adequately support the system especially teachers living in the northern regions and or remote areas agonize in trying to use the E-SPV. Service providers should therefore, collaborate with government or vise-versa to improve the existing network infrastructure for the success of the electronic salary payment voucher system for teachers and GES employees as a whole.

5.3.5 Provision of equipment for teachers

Again, embracing technology is a lofty idea but without security and privacy it remains a day-dream. Teachers with school ICT laboratories appreciate the E-SPV. However, their counter-parts without ICT labs find it inconveniencing especially those without the desired equipment to enable them use the system. This makes them to travel at times long distances to either validate or access their pay information. Implementers (CAGD) can help by ensuring that teachers are provided with computers, printers and modems so that staff can do their validation and printouts to safeguard security, privacy and or possible hijack by electronic fraudsters. On the other hand, HODs of GES together with their staffs should raise funds for the purchase of equipment to help protect their privacy and security and for the smooth running of the system in general.

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APPENDICES

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI

COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

SCHOOL OF BUSINESS

DEPARTMENT OF MANAGERIAL SCIENCES

QUESTIONNAIRE (staff)

This questionnaire is intended to collect information aimed to assess the effects of the Electronic salary payment system (E-SPV) system of the Controller and Accountant General Department in six (6) regions of Ghana. Three (3) Northern regions (Northern, BrongAhafo and Upper East) and three (3) Southern Regions (Greater Accra, Western and Ashanti). The exercise is for academic purpose only. Please respond to each question as honestly as possible. Your responses will be treated with utmost confidentiality and will be used only for academic research purpose.

Topic:

Assessing the implementation of the electronic salary payment voucher (E-SPV) systemof the Controller and Accountant General Department (CAGD). A case study of the Ghana education service (GES).

Respondent's profile

1. Gender

a. Male [ ]
b. Female [ ]

2 Age

a. 20-29 [ ]
b. 30-39 [ ]
c. 40-49 [ ]
d. 50 and above [ ]

1. Educational level

a. Diploma [ ]
b. Degree [ ]
c. Masters [ ]
d. Other please specify ……

2. Marital status

a. Married [ ]
b. Single [ ]
c. Divorced [ ]
d. Widow/widower [ ]

3. Designation

a. Teacher [ ]
b. Head teacher/master/mistress [ ]

c. Head of department [ ]
d. Human Resource Manager [ ]
e. Other please specify ……

Section B: Electronic payment system adoption

Please tick to show view (s) on each question

4. Which electronic payment system do you receive your salary through?
a. Electronic Cash [ ]
b. E-zwich [ ]
c. Online credit cards [ ]
d. Smart cards [ ]
e. Electronic check [ ]
f. Electronic transfer [ ]
g. Others please specify ……

5. Electronic salary information accessibility
Strongly Agree=5; Agree=4; Neutral=3; Disagree=2; Strongly Disagree=1

Item	**1**	**2**	**3**	**4**	**5**
A technical person support me to use this system					
I feel very confident using the system					
I need to learn a lot of things to get going with this system					
The system is complex					
The system is easy to use					

6. Do you incur any cost in accessing any information on your salary?
a. Yes [ ]
b. No [ ]
If yes, what cost is it? ……

7. Who bares the cost?
a. Staffs [ ]
b. HOD [ ]
c. Government [ ]
d. Myself [ ]
e. Other specify ……

Strongly Agree=5; Agree=4; Neutral=3; Disagree=2; Strongly Disagree=1

9. Security and privacy of employees' information

Items	**1**	**2**	**3**	**4**	**5**
It is safe to use the system					
I am sufficiently informed about security in the E-SPV					
personal information is secure					
Can be accessed at all times					

8. What's your opinion on the new electronic salary payment voucher adopted by the CAGD?

……

……..

SECTION D: Identify the challenge (s) employee face in the electronic salary payment voucher

9. Do you face any challenge (s) due to the introduction of the electronic salary payment voucher?

a. Yes [ ]
b. No [ ]

10. What challenge (s) did you encounter? **(kindly tick all that apply)**

a. Salary delay [ ]
b. Stolen identity [ ]
c. Difficulty in accessing internet [ ]
d. Lack of computers [ ]
e. Long distance [ ]
f. Inadequate know-how [ ]
g. Others please specify ……

11. How was the challenge (s) addressed?

a. I bought a laptop/computer [ ]
b. I contacted the service providers [ ]
c. I consulted a friend/colleague [ ]
d. I was assisted by a commercial person [ ]
e. Others please specify ……

12. How fast was the challenge (s) addressed?

a. Within a day [ ]
b. more than a day [ ]
c. 3 to 6 days [ ]
d. A week or more [ ]

13. Rate how often these challenge (s) occur using any of the below e-payment system on the scale of (Very often, Often and Rare)

Items	**Very often**	**Often**	**Rare**
Salary delay			
Stolen identity			
Difficulty in assess internet			
Non-availability of computers at the workplace			
Long distance travelling to assess internet			
Inadequate know-how on the use of the system by staff			

14. Would you like to stop using the electronic salary payment voucher processes due to the challenge (s)?

a. Yes [ ]
b. No [ ]

17b. if No, why? if yes, why?

……
……

Section D: Benefits of the electronic salary payment voucher system

15. Does the electronic salary payment system provide the following benefits?

Items	**Yes**	**No**	**Not really**
Security in terms of system usage			
Infrastructural arrangement at the workplace			
Reliability of information at anytime			
Accessibility to pay slip information			
Cost effectiveness			
Convenient			

THANK YOU.

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES
SCHOOL OF BUSINESS
DEPARTMENT OF MANAGERIAL SCIENCES
QUESTIONNAIRE (validators)

This questionnaire is intended to collect information aimed to assess the effects of the Electronic salary payment system (E-SPV) system of the Controller and Accountant General Department in six (6) regions of Ghana. Three (3) Northern regions (Northern, Brong Ahafo and Upper East) and three (3) Southern Regions (Greater Accra, Western and Ashanti).The exercise is for academic purpose only. Please respond to each question as honestly as possible. Your responses will be treated with utmost confidentiality and will be used only for academic research purpose.

Topic:

Assessing the implementation of the electronic salary payment voucher (E-SPV) system of the Controller and Accountant General Department (CAGD). A case study of the Ghana education service (GES).

Respondent's profile

1. Gender
- c. Male [ ]
- d. Female [ ]

2. Age
- e. 20-29 [ ]
- f. 30-39 [ ]
- g. 40-49 [ ]
- h. 50 and above [ ]

3. Educational level
- e. Diploma [ ]
- f. Degree [ ]
- g. Masters [ ]
- h. PhD [ ]
- i. Other please specify ……

4. Marital status
- e. Married [ ]
- f. Single [ ]
- g. Divorced [ ]
- h. Widow/widower [ ]

5. Designation
- f. Teacher [ ]
- g. Head teacher/master/mistress[ ]
- h. Head of department[ ]
- i. Human Resource Manager[ ]
- j. Other please specify ……

Section B: electronic payment system adoption

Please tick to show view (s) on each question

6. Which electronic salary payment system do you validate your salary for?
   a. electronic Cash [ ]
   b. E-zwich [ ]
   c. Online credit cards[ ]
   d. Smart cards [ ]
   e. Electronic check [ ]
   f. Electronic transfer [ ]
   g. Others please specify ……

7. When do you validate employees' salary information for payment?
   a. Beginning of every month [ ]
   b. Every fortnight [ ]
   c. Third week of every month [ ]
   d. End of every month [ ]

8. How long does it take you to validate employees' salary information for payment?
   a. 1 to 30 minutes [ ]
   b. 31 to 60 minutes [ ]
   c. 1 and half to 2 hours [ ]
   d. 2 hours or more [ ]

9. Can you validate after the required time?
   a. Yes [ ]
   b. No [ ]

Section C: Practical ability and security of information on the Electronic system

10. Do you need any expertise to validate?
   a. Yes [ ]
   b. No [ ]

11. Do you get constant training on how to validate?
   a. Yes [ ]
   b. No [ ]

12. Where do you do your electronic salary validation for the payment of your staff?
   a. Phone [ ]
   b. Internet café [ ]
   c. School ICT lab [ ]
   d. My laptop [ ]
   e. Office computer [ ]
   f. Other specify……

13. Do you print any salary information document after validation?
   a. Yes [ ]
   b. No [ ]

14b. If yes, where do you do it?

a. Internet café [ ]
b. School ICT lab [ ]
c. Commercial centers [ ]
d. Office [ ]
e. Others specify ……

Section D: cost effectiveness of the electronic system

14. Do you incur any cost in the validation process of electronic salary information of staff?

c. Yes [ ]
d. No [ ]

If yes, what cost is it? ……

15. Who bares the cost?

f. Myself [ ]
g. Staffs [ ]
h. HOD [ ]
i. Government [ ]
j. Other please specify ……

16. What's your opinion on the mode of Electronic salary payment voucher adopted by the Controller and Accountant General Department (CAGD)?

……

……

SECTION E: Identify the challenge (s) validators face in the electronic salary payment validation process

18. Do you face any challenge (s) in the validation process?

c. Yes [ ]
d. No [ ]

19. What challenge (s) did you encounter? (Please tick all that apply)

a. Difficulty in assess internet [ ]
b. Lack of computers [ ]
c. Inadequate know-how [ ]
d. Inadequate validation time period [ ]
e. Electricity/Power outages [ ]
f. Others specify ……

20. Who addressed the challenge (s)?(Please tick all that apply)

f. Myself [ ]
g. The service providers [ ]
h. Controller and Accountant General Department [ ]
i. Others please specify ……

21. How fast was the problem addressed?

e. Within a day [ ]
f. more than a day [ ]
g. 3 to 6 days [ ]
h. A week or more [ ]
i. Other please specify …….

22. Rate how often these challenge (s) occur using any of the below scale of;
(Very often, Often and Rare)

Items	**Very often**	**Often**	**Rare**
Difficulty in assess internet			
Non-availability of networked computers at workplaces			
Inadequate know-how of validators			
Inadequate validation time period			
Lack of training on the E-SPV system			
Electricity/Power outages			

THANK YOU.

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI

COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

SCHOOL OF BUSINESS

DEPARTMENT OF MANAGERIAL SCIENCES

INTERVIEW GUIDE FOR CAGD

This questionnaire is intended to collect information aimed to assess the effects of the Electronic salary payment system (E-SPV) system of the Controller and Accountant General Department in six (6) regions of Ghana. Three (3) Northern regions (Northern, Brong Ahafo and Upper East) and three (3) Southern Regions (Greater Accra, Western and Ashanti). The exercise is for academic purpose only. Please respond to each question as honestly as possible. Your responses will be treated with utmost confidentiality and will be used only for academic research purpose.

Topic:

Assessing the implementation of the electronic salary payment (E-SPV) system of the Controller and Accountant General Department (CAGD).A case study of the Ghana education service.

1 Which electronic payment system have you adopted for the validation and payment of staff salary?
2 Do you feel your employee information is sufficiently protected in this system?
3 What specialized skills do employees need to assess or validate employee salary information?
4 How do you ensure security in terms of the usage of the electronic system?
5 Why did you choose E-SPV?

Probe:
How reliable is it?
How assessable is it?
Is it easy to use?
Cost effectiveness?
Can it be used at all times?

6. Did you educate all employees on the E-SPV software?
7. Where your employees involve in the implementation process of the E-SPV?
   Probe
   How was that done?
8. Do you have the necessary infrastructure for the smooth running of this system?
9. Is there any legal and regulatory framework supporting the E-SPV system?
10. What are the benefits of the E-SPV system?
11. What are the challenges faced by the E-SPV?