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An Analysis of the Acceptance of the Government of Ghana's Electronic Pay (e-pay) Slip System

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Abstract

This study analyses the acceptance and use of the e-pay slip system by public sector workers in Ghana. Examination of the literature showed that no research has been done to verify the process of adoption and use of the e-pay slip system in Ghana. The General Linear Model (GLM) procedure, specifically, the Multivariate Analysis of Variance (MANOVA) was employed to analyse and explain the adoption. The constructs used for the survey include; behavioural intention, attitude, perceived usefulness, perceived ease of use, subjective norm, systems accessibility and personal innovations, which were developed based on the extended Technology Acceptance Model (TAM). The results confirmed that the extended TAM was an excellent theoretical model to understand users' acceptance of the e-pay slip system. The findings showed that the accessibility and subjective norm of the e-pay slip system were the most significant constructs that influenced the model.

Keywords*: e-pay slip system, general linear model (GLM), technology acceptance model (TAM), information systems, public sector, employees.*

Introduction

Service delivery in the public sector in Ghana has been fraught with challenges such as reliance on manual administrative and financial systems which impedes quick decision making. To improve public service delivery through effective provision of administrative and financial services, the government has embraced information technology to drive its business. Fully automated systems have been installed and are now operational in key government financial management services in Ministries, Departments and Agencies (MDAs) and Metropolitan, Municipal and District Assemblies (MMDAs).

Government payroll systems have particularly undergone immense transformation. The Controller and Accountant General's Department (CAGD) is the government outfit in charge of processing and paying public sector workers. The CAGD has fully computerized public payroll and with it comes speedy provision of pay and other related information such as pensions, loans outstanding and affordability levels. Employees can now access their pay slips and other vital information electronically via the electronic pay slip (e-pay slip) system.

E-pay slips are basically pay slips in electronic or digital format that are accessible online over the internet. It serves the same purpose as an ordinary paper printed pay slip which is a document that normally contains information on basic pay, the period covered, salary deductions, among others (The Call Beat, n.d) There are a number of benefits regarding the introduction of e-pay slip system by the government of Ghana. Employees are able to access vital and detailed information about their pay real time. Before the advent of the e-pay slips, workers had to endure an anxious wait before printed pay slip arrives. In some cases, printed pay slips were not provided at all. It was a rarity and more often a welcome relief when workers obtain their pay slips before payment of salaries. These were the agonies workers went through for decades before payroll enhanced automation brought in its wake Epay slips providing relief to many public sector workers.

The growth of the internet and mobile technology has fueled this shift of the provision of Epay slips. In addition, the increased use of mobile banking also meant that people are now more comfortable accessing their financial information over the internet. E-pay slips are becoming increasingly popular in Ghana as they provide fast, secure and cost-effective way of delivering pay-slip information to employees. E-pay slips have a number of advantages over a printed pay slip.

Among the advantages of E-pay slip is its easy accessibility via the internet. This ensures the availability of the pay slip for convenient viewing and printing by the employee 24 hours a day at practically any place in the world that has an internet connection (The Call Beat, n.d). E-pay slips come as part of a fully integrated online computerized payroll management system, which is usually a subset or module or a more comprehensive human resource information management system such as the Ghana Integrated Financial Management Information System (GIFMIS) implemented by the government of Ghana. According to Ghana's Controller and Accountant General's Department (nd), the e-pay slips were introduced to foster easy, faster and improved access to pay information which also provides several advantages to staff including the following:

i. They are more secure than printed pay slips since they are accessed via www.gogpayslip.com with a strict individual employee ID and password, which are known to only staff.

ii. They can be accessed quickly and easily from any computer or mobile phone with internet access.

iii. Staff can access previous cumulated pay slips.

iv. E-pay slips help the Controller and Accountant General's Department (CAGD) to meet its commitment to making workers' pay slips readily available, effectively serve Government of Ghana (GOG) staff and correct some of the logistics challenges faced with the delivery of printed pay slips around the country.

Some of the advantages of the e-pay slips include the convenience in which they can be accessed online. This allows employees to obtain the pay slips where and when they needed it devoid of without the hassle and time-consuming process that characterized the previous printed pay slip from CAGD where an employee has to go to the company office, request a copy of the pay slip whilst spending money, time and effort in the process (The Call Beat, n.d). E-pay slips can be produced and reprinted at the convenience of employees as when needed for purposes of for instance loan application. Electronic pay slips are stored on the system indefinitely and employees can look up the history of their pay slips. Finally, as a computerized system, e-pay slips are quickly prepared and, in most instances, made available earlier than usual.

Objectives

The objectives of this study are:

i. To assess the demographic characteristics of users of e-pay slip system in Ghana.
ii. To assess Government employees' intention to use the e-pay slip
iii. To examine Government employees' attitude towards e-pay slip
iv. To investigate perceived usefulness of the e-pay to Government employees
v. To investigate perceived ease of use of the e-pay to Government employees

Research Questions

i. What are the demographic characteristics of users of the e-pay slip system in Ghana?
ii. What behavioural factors of user's intention, attitude, perceived usefulness, perceived ease of use and personal innovations influence the adoption and use of the e-pay slip system in Ghana?

Research Hypotheses

In accordance with the previously stated objectives and consistent with the related literature, this study tested the following hypotheses:

i. $H_{1:}$ The intention of public sector employees to use Epay slip will have a positive impact on their attitude (H_{11}), perceived usefulness (H_{12}), perceived ease of use (H_{13}), personal innovativeness (H_{14}), subjective norm (H_{15}), Epay slip accessibility (H_{16}), computer and high-speed internet connectivity.
ii. $H_{2:}$ Public sector employees' attitude of the e-pay slip will have a positive impact on their perceived usefulness (H_{21}), perceived ease of use (H_{22}), personal innovativeness (H_{23}),

subjective norm (H_{24}), e-pay slip accessibility (H_{25}).

iii. H_3: Public sector employees' perceived usefulness of e-pay slip will have a positive impact on the perceived ease of use (H_{31}), personal innovativeness (H_{32}), subjective norm (H_{33}), e-pay slip accessibility (H_{34}).

iv. H_4: Public sector employees' perceived ease of use of e-pay slip will have a positive impact on personal innovativeness (H_{41}), subjective norm (H_{42}), e-pay slip accessibility (H_{43}).

Literature Review

An organization's strategic direction influences its choices. Consequently, strategic paths inform the kind of technologies and applications, governance processes and performance metrics a firm utilizes to create value to its stakeholders (Mithas & Rust, 2016). Public organizations in their bid to deliver public goods and services have also embraced technology to drive the provision of essential services. Citizens are becoming increasingly savvy and are loud in their demand for better and efficient delivery of public services. This has led to the establishment of IT departments and deployment of efficient information systems in order to provide services efficiently and effectively (Previtali & Bof, 2009).

The CAGD of Ghana has introduced a number of reforms aimed at improving public sector financial management. One of its flagship reforms is the provision of electronic pay slip System (E-Pay slip). The e-pay slip was introduced in 2013 to facilitate online access to pay slips by employees who receive their salaries through the mechanized payroll. According to N.n. (n.d), the patronage of the E-Pay slips system has been very encouraging with over 380,000 employees registered and actively utilising the system. In-spite of this hefty numbers, there remains considerable number of public workers who have not patronized the e-pay service. The government of Ghana's Epay slips service provides a self-service pay slip facility that enables employees to access their pay slips directly from a secure web site (https://www.gogpayslip.com/index.php?action=Login), thereby, reducing costs and offering the highest level of service anytime. A study conducted by Previtali and Bof (2009) on the effects of organizational environment (size and service demand) and organizational characteristics (professionalism, resource slack, and administrative performance) on e-pay slip adoption in governments revealed that government size and professionalism are the primary determinants of the adoption of computer technology.

Technology has often been leveraged for transformation in delivering value to stakeholders. Technology driven transformational brings new and often radical understanding of society as a network of information flow, which changes the structure of business models from "bricks-and-mortar" to "clicks-and-mortar" incorporating internet-based transactions (e-services) to reduce transaction cost of business processes between organizations and their stakeholders (Castells, 2001; Córdoba-Pachón & Orr, 2009). This paradigm shift is the result of a new techno-economic paradigm, which has propelled the emergence of new technologies such as e-commerce, enterprise resource planning, cloud computing, e-government, e-procurement, e-pay slip, and others as part of innovations which transforms the structure of work in modern societies (Córdoba-Pachón & Orr, 2009).

These innovations in information systems influence almost every aspect of human endeavor since information has become pivotal in-service delivery and consumption. The transformational perspective also highlights issues of control which tends to limit the scope of human agency in managing the adoption and use of information technologies in both the public and private sectors. The apparent dominance of technology in recent times suggest that societies can still achieve goals related to boosting economic growth and social inclusion and these goals depend on how optimistic governments become at using the potential offered by technologies, and how active individuals and groups become in making their concerns heard by government institutions nationally or internationally (Castells, 2001; Córdoba-Pachón & Orr, 2009).

The second perspective, gradual change, focuses on the dynamics of change where influential groups of stakeholders influence the "shaping" and use of systems and technologies in different realms (Córdoba-Pachón & Orr, 2009 ; Mansell, 2002). This perspective aims to understand and manage new forms of living and working where information systems are adopted as a sociotechnical tool in which stakeholders – including governments – have a degree of choice to adopt, reject or transform technology design

and use (Mansell, 2002). The gradual change with technology is preferred to a radical transformation which often emphases on full replacement of living and working via technologies. A gradual change was used in the implementation of the e-pay slip system. It involved working to generate communities of learning that facilitate participation and knowledge exchange where challenges were seen as opportunities for social engagement rather than consequence (Beck, Madon, & Sahay, 2004). The government of Ghana through the CAGD has implemented the GIFMIS project and is also coordinating the various modules including the e-pay slip systems. This initiative is to facilitate a smoother transition from the manual processes to e-services platform to quicken the life cycle of business process and reduce the cost of doing business in the country with appropriate technologies for stakeholders.

Theoretical background

Several theories and models have been developed, over the years, to establish factors that affect individuals' decision to adopt and use information systems to enhance performance and boost user satisfaction (Imran & Grego, 2007). Earlier researches that have been carried out can describe how application of existing theories in technological context can assist in the development of specific technology adoption approaches. These dimensions are applicable since a user's decision to select a specific electronic service delivery system over more traditional one can be considered as an issue regarding technology adoption (Gilbert, Balestrini, & Littleboy, 2004).

Various models have been developed to investigate levels of acceptance and usage of new information systems. Such models include Delone and Mclean's Information System (IS) success model to investigate the effects of system quality on perceived usefulness, user satisfaction, and system usage (DeLone & McLean, 2004) and the theory of reasoned action (TRA) (Athmay, Fantazy, & Kumar, 2016; Fishbein & Ajzen, 1975) which was used to explain information systems usage and the acceptance behavior of a range of factors on the adoption of e-government services. The Technology Acceptance Model (TAM) developed by Davis (1989) to address challenges confronting the field of information technology and systems. The objective of the TAM was to assess why the gains made in the implementation of information systems were often inhibited by a user's unwillingness to accept new technology (Cowen & Kowalczyk, 2009; Davis, 1989) by adapting TRA. The TAM was purposively developed to model user acceptance of information systems with the aim of expounding the behavioural intention to use the system (Bayraktaroglu, Kahya, Atay, & Ilhan, 2019). According to Park (2009), TAM provides a basis for tracking how external variables influence belief, attitude and intention to use, as well as the two cognitive beliefs posited by TAM: perceived usefulness and perceived ease of use information technology. According to Davis (1989), user acceptance of technological innovations has drawn sustained interests amongst information systems researchers. Legris, Ingham, and Collerette (2003) suggest that TAM has proven to be a theoretical model that assists in explaining and predicting user behavior of information technology. The actual use of technological innovations is influenced directly or indirectly by the user's behavioral intentions, attitude, perceived usefulness of the system and perceived ease of the system according to TAM. This suggests that external factors affect intention and actual use through mediated effects on perceived usefulness and perceived ease of use (Park, 2009). According to Sang, Lee, and Lee (2010), the external variables that impact the perceived usefulness and perceived ease of use are not completely explored in TAM.

Existing literature indicates that research conducted in the sphere of social norms (such as level of attachment to a phenomenon) reveals that where the attachment is intense, it will lead to a high prospect of utilization of the phenomenon such as technology (Karahanna, Straub, & Chervany, 1999; Lucas & Spitler, 1999). This development led to updating of the TAM by integrating subjective norms to produce what is now termed TAM2 (Venkatesh & Davis, 2000).

The researchers selected the extended technology acceptance model (TAM2) with the inclusion of the constructs system accessibility and personal innovativeness adapted from (Park, 2009; Varol & Tarcan, 2009) to explain the adoption and use of the e-pay slip systems by the government of Ghana's employees who draw their salaries through the CAGD. According to (Karahanna, Ahuja, Srite, & Galvin, 2002; Varol & Tarcan, 2009), personal innovativeness is an external factor which is added to TAM to

influence the adoption processes of information systems. The TAM2 model was selected primarily because several studies reviewed in the literature had used it to explain how people adopt and use technology. Some of the studies include (Park, 2009; Selim, 2003) who stated how important it is to examine TAM with web-based systems. Selim (2003) implemented a web-based system called the course website acceptance model (CWAM) and tested the relationships among the constructs using the structural equation modeling techniques. The conclusion was that the model was suitable for the data used and suggested that the constructs perceived usefulness and perceived ease of use were good determinants of the acceptance and use of a web-based system. The model was also selected because the researchers believe its applicability may vary in different countries and were also convinced that it was very appropriate for both the research objectives and hypotheses.

The hypothesis of the research gives rise to a structural model that depicts the theoretical model tested and analyzed by (Park, 2009). In the said model, called the Theoretically Interesting Model, arrows are used to link constructs (latent variables) specifying the hypothesized causal relationships towards the arrows' directions. According to Park (2009), the perceived ease of use and perceived usefulness may be regarded as cognitive constructs whilst attitude as an effective construct. In addition, he suggested that the intention to use could be observed as a behavioral construct. The model (Fig. 1) has been simplified to exclude all observed indicators and the arrows connecting them to the constructs (latent variables) in order to fit in the available space provided below.

Methodology

The study was conducted by surveying government of Ghana workers who draw their salaries through the CAGD in the Greater Accra region of Ghana.

Measurement and Data Collection

In this study, a survey instrument was developed on the basis of established measures of constructs from the information systems literature. The items for the constructs used for this study were adapted and revised from previous research studies that had been found to exhibit strong content validity. The scale for the constructs used was modified from studies built on TAM and Structural Equation Model (SEM) (Ayeh, Au, & Law, 2016; Park, 2009; Varol & Tarcan, 2009). The constructs subjective norms and system accessibility were adapted from Park (2009) with some items modifications. Subjective norms as social influence factors were measured. The items of the constructs were measured using a five-point Likert-type scales with anchors ranging from strongly disagree (1) to strongly agree (5) with three labeled as neutral.

To investigate the users' acceptance of the e-pay slip system using the extended TAM2, a self-administered questionnaire which was divided into two sections was designed. The first part consisted of five questions for eliciting demographic data, while the other section captured twenty-two (22) items related to the constructs. The questionnaire was pre-tested on 70 government of Ghana employees who draw their salaries from CAGD and were conversant with the e-pay slip systems in Ghana. The purpose of the pre-test was to identify any ambiguity in the wordings and ensure that it had strong face validity. The analysis of the pre-test and experts review remarks by five academics from the University of Professional Studies, Accra showed a strong face validity, hence, the adoption of the questionnaire for this research. According to Cronbach (1971), face validity refers to whether respondents perceive the construct items to be applicable and credible.

In order to achieve the research objectives and address the research hypotheses, the General Linear Model (GLM) was used. The main reason for using the GLM is its ability to predict one variable (usually called the dependent or response variable) from one or more other variables (usually called independent, predictor, or explanatory variables) (na, nd). The GLM also has two additional features namely an intercept and prediction error.

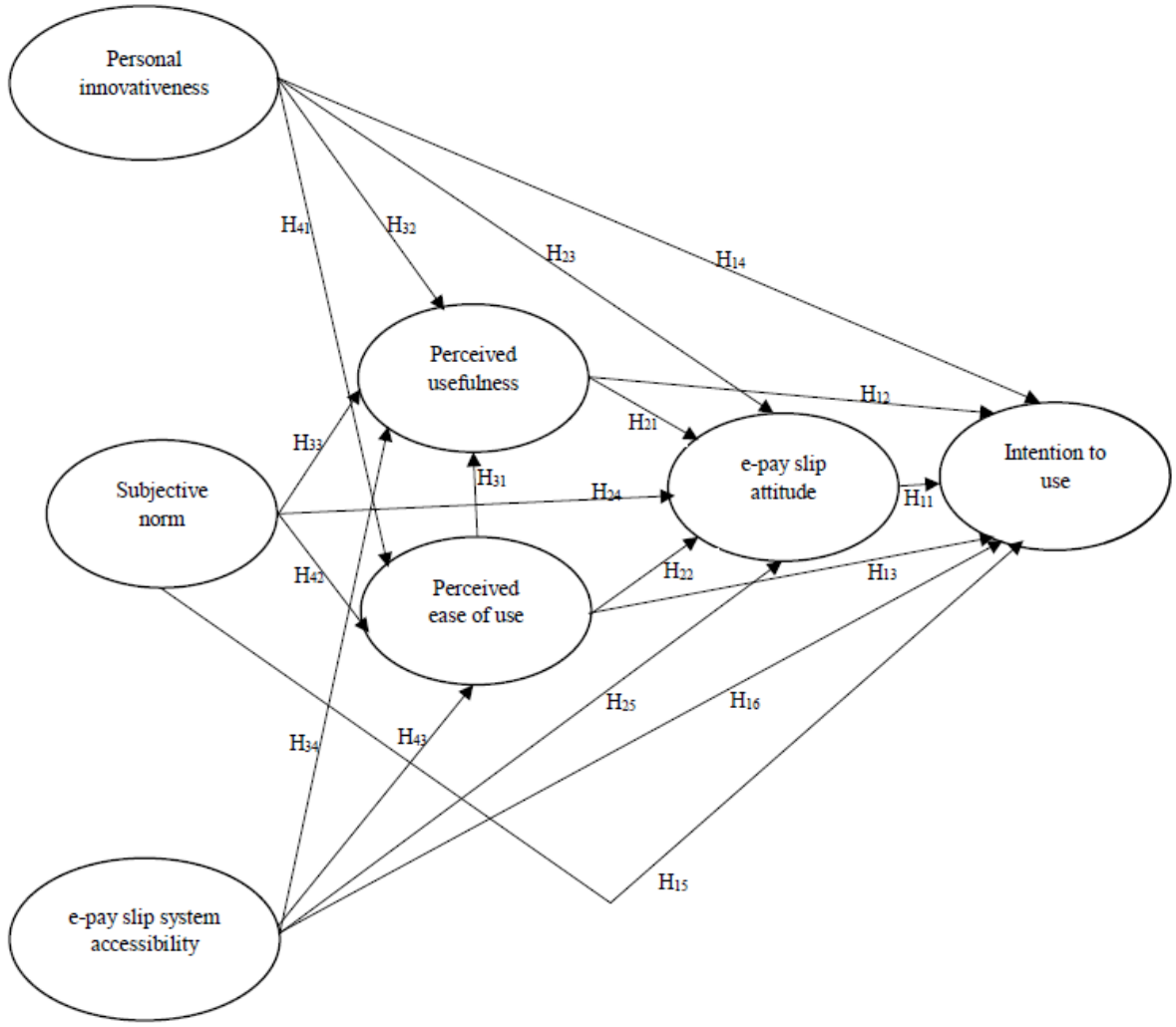

Figure. 1. Theoretically interesting model (Park, 2009)

The GLM can be used to generate statistical test procedures such as T-Test, Analyses of Variance (ANOVA), Multiple Regressions, Descriptive Discriminate Analyses (DDA), Multiple Analyses of Variance (MANOVA), structural equation modeling, and canonical correlation analyses and as such is very useful in data analyses (Graham, 2008).

The GLM provides an important conceptual framework that is applicable to all parametric procedures that suggest structural coefficients and effect sizes. It pervades all statistical procedures in common use in the fields of psychology and education (Graham, 2008).

GLM is mathematically stated as $Y = \beta_i X_i + \varepsilon$… (1). The GLM is used for predicting one or more variables from one or more independent variables. Thus, the GLM is used for univariate and multivariate test analyses. The Y in equation 1 represents the response or dependent variable, where the X's represents the independent or explanatory variables. The ε is the error term associated with the model. The GLM, as a linear model, fits only straight line. This implies that all explanatory variables and response variables are to have single exponents. Generically, it uses k predictors or independent variables to explain the variations in the response variable noted as Y. This is specified as $Y = \sum_{i=0}^{k} \beta_i X_i + \varepsilon$ … (2a), also expressed as $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k + \varepsilon$ …(2b).

The estimated GLM is differentiated from equation 2 by having a cap on the respondent variable i.e. $\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k$…(3) and the difference between equation 2 and 3 gives the prediction error of the GLM. The GLM uses the least square criterion in estimating its parameters which minimize the sum of the squared difference between observed and predicted values (Graham, 2008). The estimated β_i indicates the weighted contribution of the explanatory variable to the variability of the

response variable. The GLM uses the R-square and the adjusted R to determine the fitness of the model that is how well the independent variables predict the variability in the response variable (ibid). In most GLM studies the Adjusted R-square is preferred to the R-square due to its ability to correct biases associated the R-square. According to Graham (2008), GLM just like any other model has some underlining assumptions which it satisfies this include linearity, normality of the residuals; equality of residual variances and fixed independent variables.

From the research hypotheses stated earlier, the following four empirical models are established:

$$Yit1 = \beta_0 + \beta_1 ATit + \beta_2 UFit + \beta_3 EASEit + \beta_4 PIit + \beta_5 SAit + \beta_6 SNit + \beta_7 ICit + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$Yit2 = \beta_0 + \beta_1 UFit + \beta_2 EASEit + \beta_3 PIit + \beta_4 SAit + \beta_5 SNit + \beta_6 INit + \beta_7 INT + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

$$Yit3 = \beta_0 + \beta_1 EASEit + \beta_2 PIit + \beta_3 SAit + \beta_4 SNit + \beta_5 INit + \beta_6 INTit + \beta_7 AT + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

$$Yit4 = \beta_0 + \beta_1 PIit + \beta_2 SAit + \beta_3 SNit + \beta_4 INit + \beta_5 INTit + \beta_6 ATit + \beta_7 UF + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

The dependent and the independent variables are captured in table 1

Table 1. The dependent and the independent variables

Dependent (D) and Independent (I) Variables	**Description**
Y_{it}1 (D)	Intention to use e-pay slip system by employee i at time t
Y_{it}2 (D)	Attitude towards the use of e-pay system by employee i at time t
Yit3 (D)	Usefulness of e-pay system to employee i at time t
Yit4 (D)	Ease of use of the e-pay system to employee i at time t
AT (I)	Attitude of employee i towards the use of the e-pay system at time t
UF (I)	The usefulness of e-pay system to employee i at time t
EASE (I)	Ease of Use of e-pay system by employee i at time t
PI (I)	Personal Innovations of employee i on the use of e-pay system at time t
SA (I)	System Accessibility of employee i on the use of e-pay system at time t
SN (I)	Subjective Norms on the use of e-pay system by employee i at time t
IC (I)	Internet connectivity to use the e-pay system by employee i at time t
INT. (I)	Intention to use the e-pay system technology by employee i at time t

Using the SPSS software, the above GLM models were estimated to achieve the study objectives that seek to understand the adoption of web-based learning management system in higher education in Ghana.

The population and sample size

The population for the study is five hundred and seventy-nine thousand, five hundred and twenty-four (579,524) people who are the users of the e-pay system. The current monthly payroll report, June 2017 report of the Controller and Accountant General's Department (CAGD, 2017) gives the number of the government of Ghana employees who have registered on the e-pay slip system and are currently accessing various resources as 579,524. According to Gefen, Straub, and Boudreau (2000), the minimal sample size required for Partial Least Square (PLS) analysis is at least ten (10) times the number of items in the most complex construct. Assuming that all the seven constructs used in this survey are complex, then ten (10) times the twenty-two (22) items of these constructs will give a sample size of 220. However, the sample size for this study would be based on a confidence level of 95% with a margin of error or confidence interval of 5% of the population 579,524. Since the eligibility criteria are employees who draw their salaries from CAGD payroll and also use the e-play slip system, then the population for the survey is 579,524.

Analyses and Discussions

Demographic Characteristics

A total of 650 questionnaires were administered out of which 599 were properly completed, returned and captured in the SPSS for analyses.

The high response rate of 92.15 % can be attributed to the number of follow-ups the researchers did to ensure almost all questionnaires administered were returned. The highest number of follow-ups made was five (5).

From Table 1, the number of males who participated in the survey were more than females. The males accounted for 378 representing 63.1% whilst the females 221 representing 36.9%. The age category that dominated in the survey was 31-40 years which accounted for 325 of the sample population representing 54.3%, followed by 41-50, 196 (32.7%), below 31, 52 (8.7%) and the least being 50-60 accounting for 26 (4.3%). Respondents with bachelor's degrees were the majority representing 74% whilst those with master's degree qualifications or higher accounted for 26%. 97.8 %of the respondents had personal computers or smartphones either at home or work whilst the remaining 2.2 % did not have. This higher percentage is not surprising because according to Jumia, Africa's leading e-commerce company, the Ghanaian mobile telecommunication sector is one of Africa's largest mobile markets with about 34.57 million subscribers and a penetration rate of 119% (Zaney, 2018).

Table 1 also shows that 76.1 % had high-speed internet either at home or work whilst 23.9 % did not have. Interestingly, this is in line with Jumia's report which attributes the relatively high use of internet in Ghana to the recent push by regulators for telecommunication firms to expand their network coverage, availability of cheap smartphones from China and a robust legal regime.

It was revealed from the survey that 8.8% of the respondents often used the e-pay slip system, 31.2% of the respondents sometimes used it whilst the remaining 59.9% rarely used the system. 36.9 % of the respondents said they have ever requested for information using the e-pay slip systems as against 63.1% who never did. From Table 1, all those who requested information through the e-pay slip system never got a response, therefore, the manages of the system should fine-tune the system to make it more interactive and user-friendly.

The Intention of government employees to use the e-pay slip

In order to know government employees' intentions to use the e-pay slip, respondents were asked "How would you (they) use the e-pay slip if you (they) have access to it?" in the questionnaire. The results from the MANOVA agree with the hypotheses that the intention of an individual to use the e-pay slip is influenced by his/her attitude, perceived usefulness and perceived ease of use, personal innovations, subjective norms, system's accessibility and internet connectivity. From Table 2, the adjusted R-square value of 0.831 reveals 83.1% of the variability of the independent variables of the model explains employees' intention to use the e-pay slip.

Table 2. Demographic information of the sample

Variable	***Frequency (f)***	***Percent (%)***
Gender		
Male	378	63.1
Female	221	36.9
Age		
Below 31	52	8.7
31 – 40	325	54.3
41 – 50	196	32.7
51 – 60	26	4.3
Educational qualification		
Bachelor	443	74.0
Masters and above	156	26.0
Availability of PC/smartphone at home/work		
Yes	586	97.8
No	13	2.2

Variable	*Frequency (f)*	*Percent (%)*
Availability of high-speed internet at home/work		
Yes	456	76.1
No	143	23.9
How often do you use the e-pay slip		
Rarely	359	59.9
Sometimes	187	31.2
Often	53	8.8
Have you ever made a request for information on the system before?		
Yes	221	36.9
No	378	63.1
If you, did you get a response to your request?		
Yes	221	100.0
No	0	0.0

Further, apart from internet proficiency, all the independent variables came out strongly to determine an individual's intention to use the e-pay slip as can be seen in the findings in Table 2. The findings indicate that perceived usefulness had predictive power in terms of effect size of 17.0 % on the intention to use the e-pay slip at a 5 % significant level. It can there be generalized that an employee's intention to use e-pay slip can be determined by how useful he/she finds it. It can also be seen in Table 2 that about 33.0 % of the variability in an employee's intention to use the e-pay slip was largely affected by his/her perceived ease of use. Even though the study observed that perceived ease of use and attitude both had a significant positive power on the intention to use the e-pay slip, comparatively, attitude came out slightly stronger than perceived ease of use with 33.3 % predictive power.

Table 2 also demonstrated that the accessibility of the Epay slip system had a high influential role in determining one's intention to use Epay slip than personal innovations. The study depicts e-pay slip accessibility predictive of 29.3 % as against 25.6 % predictive power of personal innovation which shows significant inferences on one's intention to use the e-pay slip.

Subjective norms also had a predictive power of 22.1 % on one's intention to use the e-pay slip. It manifests in Table 2 that internet connectivity failed to have a significant impact on one's intention to use the e-pay slip despite its positive predictive estimate of 0.4 %. Even though internet connectivity had insignificant influence on one's intention to use the e-pay slip, it does not rule out its impact due to the direct relationship established by its effect size estimate. The analysis has, therefore, revealed how users are influenced by the easy access of the e-pay slip, their personal innovations and subjective norms.

Employees' attitudes toward e-pay slip usage

In establishing users' attitudes toward the use of the e-pay slip system, government employees who draw their salaries through CAGD were asked in one of the survey questionnaire that "How do you (they) plan using the e-pay slip if you (they) have access to it". The MANOVA estimates in Table 3 address the second hypothesis of the study. The justification for this hypothesis was that employees' attitude towards the e-pay slip can be influenced by variables such as perceived usefulness, perceived ease of use, personal innovations, systems accessibility, subjective norms, internet connectivity and their intention to use the system. The adjusted R-square estimate of 0.585 demonstrates a higher proportion of the variability of one's attitude towards the e-pay slip which is explained by the model.

Unlike previous conditions where internet connectivity had insignificant influence on one's intention to use the e-pay slip, it appears in Table 3 that internet connectivity moderately has a significant influence on one's perceived attitude towards e-pay slip with a positive predictive power of 4.6 %. Also, from Table 3, employees' perceived usefulness, perceived ease of use, personal innovations, system's accessibility, subjective norms and intention to use the e-pay slip had a significant influence on their attitude towards using it. Subjective norms and system's accessibility had significant predictive factors of 31.7% and 22.6% respectively to influence one's attitude towards using the e-pay slip. Even though the two variables had a significant impact on the use of the e-pay slip, the influence of subjective norms is much higher than the system's accessibility. In addition, Table 3 demonstrates that one's intention to use had a significant positive predictive power of 15.0% to influence one's attitude towards using the e-pay slip.

Table 3. Dependent variable: government employees' intention to use the e-pay slip

Source	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**	**Effect Size**
Corrected Model	619.760[a]	25	24.790	118.618	.000*	.838
Intercept	143.874	1	143.874	688.413	.000*	.546
Usefulness	24.495	4	6.124	29.301	.000*	.170
Easiness	58.909	4	14.727	70.467	.000*	.330
Attitude	59.580	4	14.895	71.271	.000*	.333
Innovations	41.081	4	10.270	49.141	.000*	.256
Accessibility	49.553	4	12.388	59.276	.000*	.293
Norms	33.833	4	8.458	40.472	.000*	.221
Internet connectivity	.454	1	.454	2.174	.141	.004
Error	119.544	572	.209			
Total	9100.000	598				
Corrected Total	739.304	597				
a. R Squared = .838 (Adjusted R Squared = .831)						

Interestingly, the findings demonstrate the important role systems accessibility, subjective norms, and the intention played in impacting on the attitude of government employees to use the e-pay slip system.

Perceived Usefulness of E-Pay Slip to Government Employees

To ascertain perceived usefulness of the e-pay slip to government employees, an analysis was ran on the survey data on the survey the questionnaire's question, "Whether the e-pay slip enhances their day-to-day business transactions". Respondents perceived the e-pay slip to be useful as the trend was evident in the relationship proposed by the model as shown in Table 4. The adjusted R-square estimate of 0.567 demonstrates a higher proportion of the variability of one's attitude towards the e-pay slip which is explained by the model. There were significant positive influences of the following constructs; perceived ease of use, system's accessibility, subjective norms and attitude on employees' perceived usefulness of the e-pay slip with predictive powers of 16.0%, 12.8%, 16.7%, and 14.1% respectively. Subjective norm had the highest predictive power of 16.7 %. The following constructs; personal innovation and intention, had a moderate significant influence on perceived usefulness of the e-pay slip with predictive powers of 4.1% and 8.2% respectively whilst the construct internet connectivity had insignificant influence on one's perceived usefulness of the e-pay slip.

Per the analysis above, the most valuable construct that influences the perceived usefulness of the e-pay slip systems is the subjective norm. It is, therefore, important the CAGD who deployed the system fine-tune it to make it more interactive. Inclusions of valuable services to the system, for example, being able to respond to one's online request promptly and adding some enhanced features have a high potential of attracting many more government employees to use it.

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Table 4. Dependent Variable: Government employees' attitude towards the e-pay slip

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Effect Size
Corrected Model	249.256[a]	25	9.970	34.672	.000*	.602
Intercept	286.045	1	286.045	994.739	.000*	.635
Usefulness	16.876	4	4.219	14.672	.000**	.093
Easiness	22.486	4	5.621	19.549	.000*	.120
Innovations	13.096	4	3.274	11.385	.000**	.074
Accessibility	48.112	4	12.028	41.828	.000*	.226
Norms	76.342	4	19.085	66.371	.000*	.317
Internet connectivity	7.973	1	7.973	27.727	.000**	.046
Intention	29.075	4	7.269	25.278	.000*	.150
Error	164.483	572	.288			
Total	6604.000	598				
Corrected Total	413.739	597				
a. R Squared = .602 (Adjusted R Squared = .585)						

Perceived ease of use the e-pay slip

Table 5 demonstrates a high degree relationship between the constructs and one's perceived ease of use of the e-pay slip as projected by the model. In table 5, the model estimates an adjusted R-square value of 0.835. The question respondents were asked in order to elicit information on their perceived ease of use of the e-pay slip was "To what extent do you find e-pay slip easy to use? All the constructs personal innovation, systems accessibility, subjective norm, internet connectivity, intention, attitude and perceived usefulness had a significant relationship with the perceived easiness of the e-pay slip. This suggests that the constructs are needed to influence employees' judgments about how easily the e-pay slip can be used. Apart from the construct perceived usefulness that showed a slightly significant impact on how one perceives easy use of the e-pay slip with the predictive power of 4.9 %, the rest of the constructs showed significant influence. From table 5, the construct systems accessibility was the strongest influencer on employees' perceived ease of use of the e-pay slip with a predictive power of 63.5 %, followed by subjective norm with a predictive power of 40.5 %. The following constructs intention, attitude, internet connectivity, personal innovations, and personal innovations had significant impacts on ones perceived ease of use of the e-pay slip with predictive powers of 36.7%, 15.7%, 12.8% and 10.9% respectively.

It is remarkable to note that the construct that had the greatest effect on perceived of use was systems accessibility followed closely by the subjective norm. Once users are not restricted from accessing the e-pay slip system from any electronic device using any internet browser, it made it acceptance much easier. This high impact of systems accessibility on how users' perceived ease of use can also be attributed to the fact that the price of mobile data is affordable in Ghana and hence users may be prepared to buy their data whenever they find it necessary. According to (Howdle, 2018), Ghana is ranked the 25th country in the world with the cheapest mobile data. The high impact of systems accessibility also buttresses the transformational perspective espoused by the information society which sees the advancement of new technologies such as e-pay slip and others as part of innovations which transforms the structure of work in modern societies (Córdoba-Pachón & Orr, 2009).

Results

The results of the study revealed that the intention of an individual to use the e-pay slip is hampered by his/her attitude, perceived usefulness and perceived ease of use, personal innovations, subjective norms, system's accessibility and

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internet connectivity. The outcome of the study indicates that internet efficiency either at the work place or at home is determined by an individual's intention to use e-pay system. This issue is attributable to poor internet connectivity in certain parts of Ghana.

Lack of education on the use of e-pay systems also influenced the workers intention and attitude to use it. As the system was rolled out without any prior education of the workers on its usage at their various work places.

Table 5. Dependent variable: government employees' perceived usefulness of the e-pay slip

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Effect Size
Corrected Model	385.579[a]	25	15.423	32.227	.000*	.585
Intercept	122.975	1	122.975	256.960	.000*	.310
Easiness	52.015	4	13.004	27.172	.000*	.160
Innovations	11.801	4	2.950	6.165	.000**	.041
Accessibility	40.064	4	10.016	20.929	.000*	.128
Norms	54.881	4	13.720	28.669	.000*	.167
Internet connectivity	1.619	1	1.619	3.382	.066	.006
Intention	24.496	4	6.124	12.796	.000**	.082
Attitude	44.879	4	11.220	23.444	.000*	.141
Error	273.747	572	.479			
Total	7449.000	598				
Corrected Total	659.326	597				
a. R Squared = .585 (Adjusted R Squared = .567)						

Table 6. Dependent variable: government employees' perceived ease of use of the e-pay slip

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Effect Size
Corrected Model	473.227[a]	25	18.929	122.206	.000*	.842
Intercept	840.741	1	840.741	5427.843	.000*	.905
Innovations	10.859	4	2.715	17.526	.000*	.109
Accessibility	154.136	4	38.534	248.776	.000*	.635
Norms	60.376	4	15.094	97.446	.000*	.405
Internet connectivity	13.038	1	13.038	84.174	.000*	.128
Intention	51.281	4	12.820	82.768	.000*	.367
Attitude	16.472	4	4.118	26.586	.000*	.157
Usefulness	4.567	4	1.142	7.371	.000**	.049
Error	88.599	572	.155			
Total	9516.000	598				
Corrected Total	561.826	597				
a. R Squared = .842 (Adjusted R Squared = .835)						

This is confirmed by the outcome of the survey that revealed that, out of the number of respondents to the questionnaire, 36.9% of them who tried to enquire on the use of the e-pay system never had any response and 63.1% never enquired nor had any form of education on its usage. In view of this lack of education and inability to be provided with the needed help through the e-pay system, some workers in Ghana are doubtful of the perceived usefulness and perceived ease of use of

the system. As a section of workers in the country are computer illiterate and added to the fact that most workers do not own computers at home, their personal innovativeness are affected by some these challenges. The results also state the important role systems accessibility, subjective norms, and the intention played in impacting on the attitude of government employees to use the e-pay slip system. It is imperative CAGD who deployed the system tries to make it interactive and user friendly.

For some time, in the past, Ghanaian workers are used to paper pay slips (hard copy payslip). These paper slips were always printed and made available to workers in their offices. The sudden switch to e-pay slip or paperless payslip might have affected their subjective norm and their attitude towards its usage. Even though, the e-payslip is accessible everywhere in the country where one can be hooked onto the net. However, lack of internet connectivity in certain parts of the country make workers get frustrated whenever they are in urgent need of their pay slip. In such instances, they have to join vehicle and ply through the poor road network to the district centers where they can have access to the internet cafés and printing machines before, they can get the hard copy of their payslip. Sadly, the law in Ghana still requires that documents be submitted in hard copies for official purposes. This law still compels workers to look everywhere, no matter how long it will take them and how much it will cost to get their e-pay slips printed before they could present official documents for consideration.

In view of the cumbersome processes involved, some workers still prefer the old system of paper payslips. Nonetheless, technology has come to stay and its winds continue to blow across the nook and cranny of every nation.

Contribution of the paper

Prior empirical studies on the adaption of the electronic system mainly focused on one or two issues. For instance, a study conducted by Previtali and Bof (2009) on the effects of organizational environment and organizational characteristics on e-pay slip adoption in governments, the research only limits the independent variables to organizational environment (size and service demand), organizational characteristics (professionalism, resource slack, and administrative performance). Similarly, a research conducted by Park (2009) used the perceived ease of use, perceived usefulness, attitude as the main independent variables against the adoption of electronic system, but went further to suggest that intention could be incorporated as one of the explanatory variables. This has created a research gap in the studies of electronic based system. The contribution of this paper is that it has incorporated the intention to use e-pay slip together with the attitude, perceived usefulness, perceived ease of use, personal innovativeness, subjective norm, e-pay slip accessibility, internet connectivity. Therefore, the relevant of this study cannot be over-emphasised.

Conclusion

The analysis and discussion section of the study demonstrates that most of the constructs of TAM have a direct influence on the acceptance of the e-pay slip systems by the government of Ghana employees who draw their salaries from the CAGD. The findings of the study also show that majority of the respondents had smartphones with mobile data and were willing to access information they found useful. The higher penetration of smartphones, cheap mobile data, easy accessibility of e-pay slips and the non-requirement of any formal training before accessing the e-pay slip systems and other TAM constructs have influenced the high acceptance of the e-pay slip system. The implementers of the system need to fine-tune it with additional features to make it more interactive and user-friendly.

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