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Factors Affecting the Uptake of E-Government Services on the Government Services Bus (GSB) in Developing Countries. A Case Study of Ministry of Lands and Natural Resources in Zambia

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Abstract

E-Governance addresses many challenges of traditional governance, among them high operational costs, quality and efficiency. The purpose of this study was to firstly identify the major factors affecting the uptake of e-government services on the government services bus (GSB) using the ministry of lands and natural resources as a case study. The second objective of the study was to develop a framework for E-government services based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model. The research adopted the Unified theory of Acceptance and use of technology (UTAUT) model to guide the study. The sample size was 384 of the members of the public who walked into the service centre at Mulungushi house for the counter services, 345 questionnaires were successfully returned. This represented a 90 percent response rate. The data collected was analyzed using descriptive analysis and inferential statistics (Pearson Correlation Coefficient). Pearson Correlation Coefficient was used to determine the relationships between the variables. The hypotheses were accepted as they showed p-values less than 0.005. It thus established that performance expectancy, effort expectancy, social influence and facilitating conditions have an effect on the intention of use and actual use of e-government services. The research further recommended the need for increased awareness of availability of e-government services on the service bus as well as the provision of facilities to access the e-services.

Keywords

E-Government Services, UTAUT Model, Government Services Bus (GSB), Uptake

1. Introduction and Background

E-governance refers to the use of information communication technology in the administration of government affairs; it also includes the sharing of information, and inclusion of the public in the decision making and policy formulation of their society (Dhaoui, 2019). E-governance further refers to the delivery of public services. It has increasingly become an essential link between the government and the governed, both in terms of information sharing and coordination of developmental matters and most importantly as a means of public service delivery.

Glass & Newig (2019) observe that e-governance is divided into three elements: E-democracy which involves the participation of the public in decision making and sharing of information using e tools, E-governance which is the inclusion of the public in policy decisions and policy direction, and lastly E-service delivery which is the provision of public services through the use of ICT.

Among others, e-governance has been seen as a sure way of reducing the costs of government operations and improving the inclusivity and providing a further reach to citizens.

However, the transformation to e-governance as part of the new public administration agenda has encountered many challenges leading to the slow implementation and low success rate.

Many countries the world over have come to terms with the increased interest and enlightenment of the citizenry in affairs of their governments, this has been further compounded by the need for governments to continuously derive authority from the governed by means of constant engagement and consultation. With this in mind, there has been a transformation to a more open system of governance away from the traditional office walls, confidential papers and usually restricted government office spaces; this has given rise to the governance by means of borderless electronic means, E-governance (Glass & Newig, 2019).

The fast changing global environment and increased population have led to a more challenging demand of public services and governance. It has given rise to a wider range of public services and even more critical, a need for consensus among citizens for the effective administration of development.

As such, there is an urgent need for improved governance that closes the gap on the challenges facing governments, these include corruption, increased costs and the need to increase government revenue, E-governance is thus then a sure way of addressing challenges such as these as it engenders more transparency

and involvement of citizens in the administration of their affairs. It also provides a platform of increased revenue as the government is better able to reach more citizens in the provision of public services.

Zambia has launched a number of e governance systems such as the immigration management system (IMS), Health information management system (HIMS) and the Zambia integrated land management system (ILMS), others include the electronic Zambia transport information system (E-Zamtis) and other e services provided by the local authorities such as building permit approvals, bill payments, etc. The government services bus (GSB) is another e governance initiative by the government, it allows for electronic access of government services and payments over a number of ministries and departments.

According to Chilembo & Tembo (2020) the e-governance agenda has continued to lag behind especially in the aspect of government to government (G2G) e services due to lack of coordination and collaboration between government agencies. There has been an almost deliberate negative attitude from government agencies to collaborate with each other agencies electronically in some instances due to a perception of superiority over another.

The paper looks at the factors affecting the uptake of e-government services on the government services bus, using the ministry of Lands and Natural resources as a case study. The rest of the paper is arranged as follows: in Section 2, the literature review is given. In Section 3, the research methodology is presented. The research results and conclusions are given in Sections 4 and 5 respectively

2. Literature Review

The concept of e governance is a direct response to the changes in the administration of governments the world over. It is a shift to a more transparent and more inclusive system of governance, also, it responds to the need to reduce costs of administration and effectively administer over an increased world population. It can be traced back to the introduction of Information communication technology in governments in the times of liberal political parties of the 1990's. This drive to electronic government use was further compounded by the rise of the internet.

Chipeta (2018) advances that E governance exists mainly on four fronts; Government to government (G2G) which is the electronic collaboration government agencies and departments, even between the central and local government. Government to employee (G2E), this is the electronic interaction of government and its employees, the civil servants, an example of this is the e payroll system and issuance of electronic pay slips.

Government to Business (G2B), this is the interaction of government with business firms such as through the e-tax systems and e registrations with the Patents and companies registration agency (PACRA).

Another element of e-governance is the government to citizen (G2C), this di-

rect electronic interaction of government and the citizen, an example of this is through the electronic Zambia transport information system, vehicle registrations etc.

According to Undi-Phiri & Phiri (2022) the successful implementation of e-governance depends on the acceptance of both the government and the citizens. Government and its workforce should comprehensively accept electronic governance in order to properly implement to citizens. This acceptance can be in the form of evident policy direction, and the deliberate creation of infrastructure that supports e-governance.

While the acceptability of e-governance is dependent on both governance and citizens, it is important to note, adequate sensitization of citizens plays a pivotal role as the citizens are unable to embrace what they are unaware of or what they do not comprehensively understand. With proper knowledge of the existence of e governance and its supposed benefits will come with easier acceptability (Undi-Phiri & Phiri, 2022).

Sikaonga & Tembo (2020) argue that the establishment and laying out of adequate information communication technology infrastructure should be the beginning of any e-governance project because it is the prerequisite of any e governance initiative. They espouse that governments cannot exist without sound information communication technology infrastructure.

There is an evident correlation between the existence of sound information communication technology infrastructure and the success of e-governance projects, however it is important to note that especially in the case of developing countries where there has been an increase in e-governance projects, costly infrastructure has been set up in some instances and has still not improved the success of e-governance projects, to an extent due to lack of acceptability by citizens , while the infrastructure may exist and is key, there is also a deliberate need for a more psychological change of attitude and perception change of citizens to begin to see the need and importance of e governance.

According to Soneka & Phiri (2019) while information communication technology infrastructure is key in any e-governance project, the ease of use is even more critical to its success. The systems should be user friendly and teachable to enable a quick and easy assimilation by the intended users. Without this ease of use, the intended users will shun the system. The said ease of use however should be well taught to enable citizens learn, there should be deliberate effort to help citizens and other users to become more conversant with e-systems as the said ease of use is highly subjective.

The successful implementation of the e government agenda is contingent upon citizens embracing the e-systems, as such the design of e-government projects requires an inclusive approach that is cognizant of the citizens viewpoints (Al Salmi & Hasnan, 2016).

Essentially, competencies are necessary for the successful implementation of e-governance initiatives, both on the drivers of e-governance and the consumers

because the success of any initiative depends on both the consumers and the drivers themselves.

Unified Theory of Acceptance and Use of Technology (UTAUT)

The unified theory of acceptance and use of technology model is a theory that seeks to harmonise the many models tackling people's reaction to changes in their way of doing business, how people react to the introduction of electronic tools in their business transactions, and in accessing services, both public and private. This model also addresses how public institutions cope with the transition to electronic operations both within the organisation and outside. It especially centres on the willingness of stakeholders to accept the newly introduced electronic tools (Venkatesh et al., 2003).

According to this model, the perceived ease of use is highly critical to the acceptance of any technology (Sarfarazi, 2017).

The Unified theory of Acceptance and use of technology contends that that actual use of technology is determined by behavioural intention.

That the likelihood of new systems and technology been adopted is dependent on four main variables; Performance expectancy, effort expectancy, social influence and facilitating conditions.

Performance expectancy refers to the self belief by potential users that the adoption and use of the new technology and systems will help the user attain potential gains in work performance. Effort expectancy on the other end refers to the effort of use and the ease associated with using the said new technology and systems, essentially, it is the effort to learn and use (Venkatesh et al., 2003). Social influence refers to the degree to which the individual perceives others believe he/she should adopt and use the said technology. The others may be supervisors, colleagues and many other social relationships. It further includes the behaviour of people towards them and their use of new technology and systems (Marikyan & Papagiannidis, 2021).

The facilitating conditions refer to the pre-existing technical infrastructure for the successful operation and use of new systems and technology, these conditions are essential for the support and ease of use of the new systems.

According to the UTAUT model, there are also moderation aspects that gauge the strength of the intention to use and adopt the new tech (Marikyan & Papagiannidis, 2021), these are; age, gender, experience and the voluntariness of use.

3. Methodology

The research employed a descriptive design. The study population was comprised of respondents that accessed the customer service centre at Ministry of lands headquarters in Lusaka for over the counter services, there are approximately 600,000 properties on the lands register at different stages of titling (Tembo & Sagashya, 2021). The study sample was thus computed using Slovin's formula:

$$n = \frac{N}{1 + Ne^2}$$

where n is the sample size, N is the population size and e is the margin of error to be decided by the researcher. With a 5% margin of error,

$$\text{Therefore}: n = \frac{600,000}{1 + 600,000\left(0.05^2\right)}$$

The sample size was computed to be 384.

The total number of questionnaires successfully returned was 345, representing a response rate of 90%.

The questionnaire was designed based on the UTAUT model, consisting of the constructs of the model; performance expectation, effort expectation, social influence and facilitating conditions.

3.1. Reliability and Validity

The reliability of the data was achieved by use of the inter-rater method. The results of the researcher where compared with those of the research assistant. The other method was the use of the internal consistency method where the questions and the responses were logically related and tallied.

Further a reliability analysis by way of the cronbach alpha was also run to measure the consistency of likert scale elements of the questionnaire. It presented a cronbach alpha of 0.92 which was beyond the recommended value of 0.70 (Hair Jr., Black, Babin, & Anderson, 2010).

The validity of data determined would be applied to the research instrument by using the content validity. The content validity ensured that the research instrument was representative of the full content of the phenomenon under investigation. In addition, the content validity ensured that all the aspects of the subjects under investigation were covered.

3.2. Research Model

The research adopted the UTAUT model to examine the factors affecting the uptake of e-government services on the government services bus. The model is shown in **Figure 1**. The model, developed by Venkatesh et al. in 2003 has four independent variables and two dependent variables. The model also has what its authors referred to as moderating variables; these have are: Gender, Age, Experience and Voluntariness.

3.3. Research Hypothesis

The Research sought to test the following hypothesis:

1) H1: Performance expectancy has a positive effect on the intention of use of the government service bus (GSB).

2) H2: Effort expectancy has a positive effect on the intention to use of the government service bus (GSB).

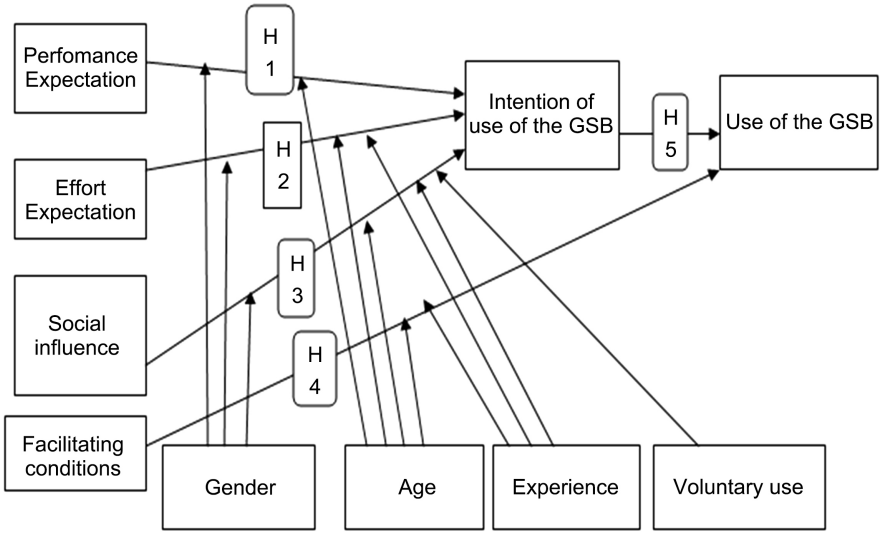


Figure 1. Unified theory of acceptance and use of technology model (Venkatesh et al., 2003).

3) H3: Social influence has a positive effect on the intention of use of the government service bus (GSB).

4) H4: Facilitating conditions have a significant effect on the use of the government service bus (GSB).

5) H5: The intention of use has a significant effect on the actual use of the government services bus (GSB).

3.4. Model Testing

Pearson's correlation analysis was used for hypothesis testing. This was done using SPSS to test if there is a relationship between the dependent and independent variables. A Sig value below 0.05 indicates that there is a significant relation between the dependent and independent variable whereas a Sig value above 0.05 indicates that there is no relationship between the dependent and independent variable.

4. Results

4.1. Analysis and Demographics

Figure 2 below shows that 37.6 % of the respondents were female while 62.4% were male.

4.2. Level of Education

Figure 3 below represents level of education of respondents.66 respondents representing 19.1% had Secondary High School education and below, 116 of respondents, representing 33.3% had a Diploma, 117 of respondents representing 33.9% had a first degree. Further, 26 of the respondents representing 7.5% had a master's degree and lastly, 3 respondents representing. 9% had a PhD level of education.

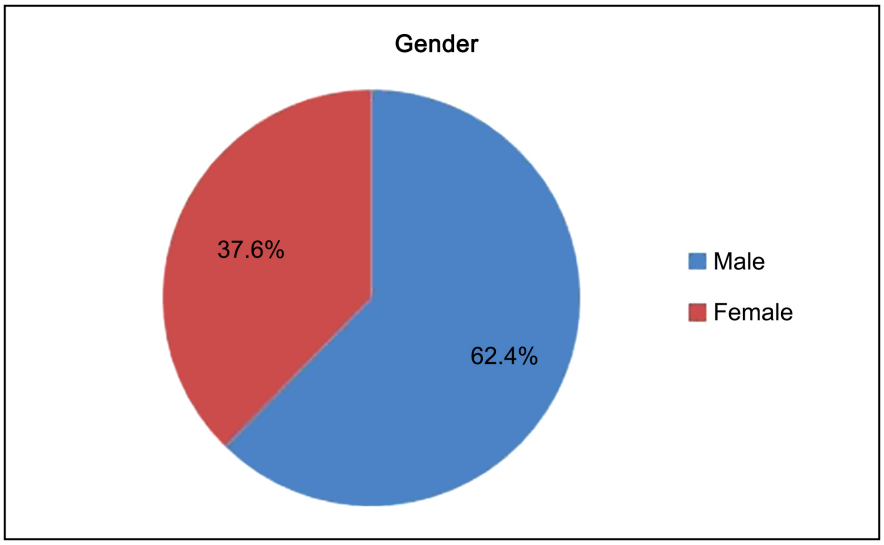


Figure 2. Gender distribution of respondents.

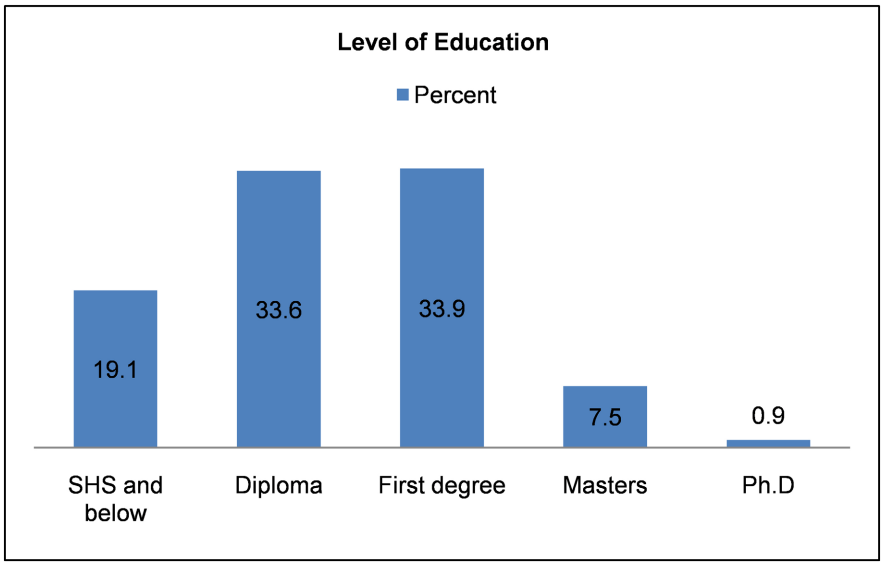


Figure 3. Highest level of education.

4.3. Computer and Internet Knowledge

Figure 4 and Figure 5 below illustrate the respondents' computer and Internet knowledge respectively.

Of the respondents, 36 representing 10.4% and, 38 representing 11% had very poor and poor computer knowledge respectively. 120 representing 34.8%, 84 representing 24.3% and 65 representing 18.8% had moderate, Good and very good computer knowledge respectively.

Of the respondents, 39 representing 11.3%, 47 representing 13.6% had very poor and poor internet knowledge respectively. Further, 90 representing 26.1%, 72 representing 20.9% and 96 representing 27.8% had moderate, good and very good internet knowledge.

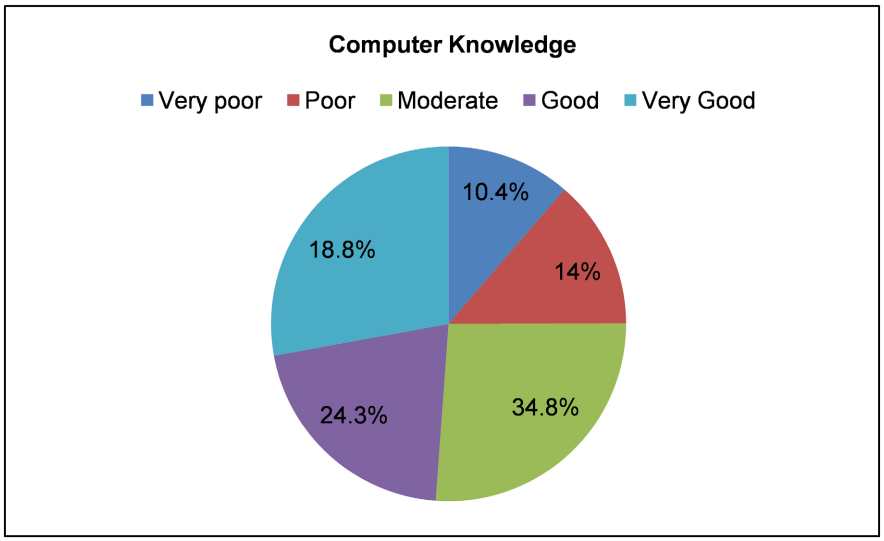


Figure 4. Computer knowledge.

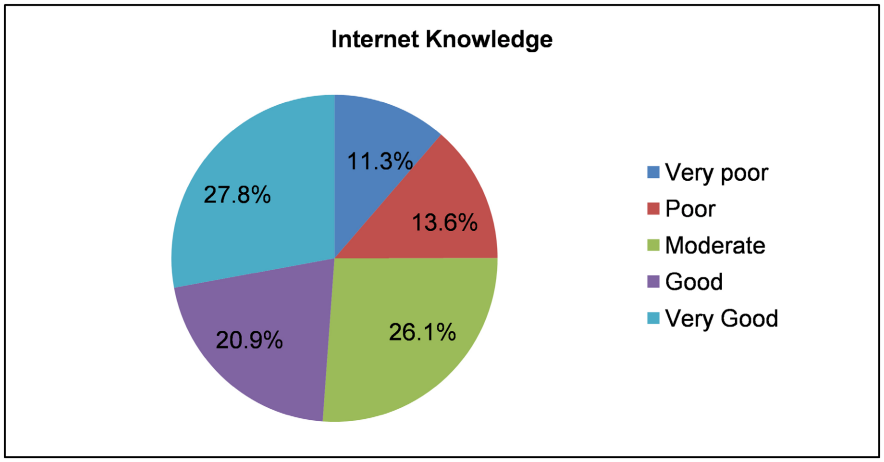


Figure 5. Internet knowledge.

4.4. Pearson Correlation Coefficient

4.4.1. Pearson Correlation Coefficient between Performance Expectancy and Behavioral Intention of Use

Table 1 shows the Pearson correlation run to determine the impact of performance expectancy on the intention of use of the government services bus (GSB). The results revealed that there was a strong positive correlation between performance expectancy and behavioural intention of use (r = 0.517, $p = 0.000$). Since the $p < 0.05$, it means that there is a statistically significant correlation between performance expectancy and behavioural intention of use of the government service bus.

4.4.2. Pearson Correlation Coefficient between Effort Expectancy and Behavior Intention of Use of the Government Service Bus (GSB)

Table 2 shows the Pearson correlation run to determine the impact of Effort Expectancy on the intention of use of the government services bus (GSB). The results revealed that there was a strong positive correlation between Effort

Table 1. Pearson correlation coefficient between performance expectancy and behavioral intention of use.

Correlations			
		Performance Expectancy	Behaviour Intention of use
Performance expectancy	Pearson Correlation	1	0.517**
	Sig. (2-tailed)		0.000
	N	345	345
Behavioral intention of use	Pearson Correlation	0.517**	1
	Sig. (2-tailed)	0.000	
	N	345	345

**Correlation is significant at the 0.01 level (2-tailed).

Table 2. Pearson correlation coefficient between effort expectancy and behavior intention of use of the Government Service Bus (GSB).

Correlations			
		Effort Expectancy	Behavioral Intention of use
Effort expectancy	Pearson Correlation	1	0.635**
	Sig. (2-tailed)		0.000
	N	345	345
Behavior Intention of use	Pearson Correlation	0.635**	1
	Sig. (2-tailed)	0.000	
	N	345	345

**Correlation is significant at the 0.01 level (2-tailed).

expectancy and behavioural intention of use (r = 0.635, $p = 0.000$). Since the $p < 0.05$, it means that there is a statistically significant correlation between Effort expectancy and behavioural intention of use of the government service bus.

4.4.3. Pearson Correlation Coefficient between Social Influence and Behavioral Intention of Use of the Government Service Bus (GSB)

Table 3 shows the Pearson correlation run to determine the impact of Social influence on the intention of use of the government services bus (GSB). The results revealed that there was a strong positive correlation between Social Influence and behavioural intention of use (r = 0.414, $p = 0.000$). Since the $p < 0.05$, it means that there is a statistically significant correlation between Social Influence and behavioural intention of use of the government service bus.

4.4.4. Pearson Correlation Coefficient between Facilitating Conditions and Use of the Government Service Bus (GSB)

Table 4 shows the Pearson correlation run to determine the impact of Facilitating Conditions on the use of the government services bus (GSB). The results revealed that there was a strong positive correlation between Facilitating Conditions and the use of the Government services bus (r = 0.413, $p = 0.000$). Since the $p < 0.05$, it means that there is a statistically significant correlation between facilitating conditions and the use of the government service bus.

4.4.5. Pearson Correlation Coefficient between the Intention of Use of the Government Services Bus and the Use of the Government Services Bus (GSB)

Table 5 shows the Pearson correlation run to determine the impact of the intention

Table 3. Pearson correlation coefficient between social influence and behavioral intention of use of the Government Service Bus (GSB).

Correlations			
		Social Influence	Behavioral Intention of use
Social Influence	Pearson Correlation	1	0.414**
	Sig. (2-tailed)		0.000
	N	343	343
Behavioral Intention of use	Pearson Correlation	0.414**	1
	Sig. (2-tailed)	0.000	
	N	343	345

**Correlation is significant at the 0.01 level (2-tailed).

Table 4. Pearson correlation coefficient between facilitating conditions and use of the Government Service Bus (GSB).

Correlations			
		Facilitating Conditions	Use of the Government service Bus
Facilitating Conditions	Pearson Correlation	1	0.413**
	Sig. (2-tailed)		0.000
	N	345	272
Use of the Government services bus	Pearson Correlation	0.413**	1
	Sig. (2-tailed)	0.000	
	N	272	272

**Correlation is significant at the 0.01 level (2-tailed).

Table 5. Pearson correlation coefficient between the intention of use of the government services bus and the use of the Government Services Bus (GSB).

Correlations			
		Intention of use of the government services bus	Use of the Government service Bus
Intention of use of the government services bus	Pearson Correlation	1	0.445**
	Sig. (2-tailed)		0.000
	N	345	342
Use of the Government services bus	Pearson Correlation	0.445**	1
	Sig. (2-tailed)	0.000	
	N	342	342

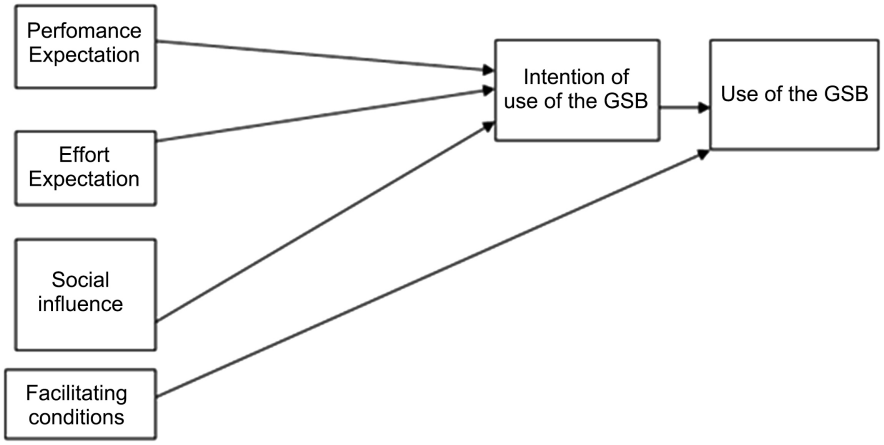
**Correlation is significant at the 0.01 level (2-tailed).

of use of the government services bus on the use of the government services bus (GSB). The results revealed that there was a strong positive correlation between Facilitating Conditions and the use of the Government services bus (r = 0.445, p = 0.000). Since the $p < 0.05$, it means that there is a statistically significant correlation between the intention of use and the use of the government service bus.

4.5. Summary of Hypothesis Tests

Hypothesis No	Hypothesis	P value	Decision
H1	Performance expectancy has a positive effect on the intention of use of the government service bus (GSB).	0.000	Accept
H2	Effort expectancy has a positive effect on the intention to use of the government service bus (GSB).	0.000	Accept
H3	Social influence has a positive effect on the intention of use of the government service bus (GSB).	0.000	Accept
H4	Facilitating conditions have a significant effect on the use of the government service bus (GSB).	0.000	Accept
H5	The intention of use has a significant effect on the actual use of the government services bus (GSB).	0.000	Accept

4.6. Proposed Model after Hypothesis Test Results



5. Conclusion and Recommendations

The research concluded that the performance expectancy, effort expectancy, social influence have an effect on the intention of use of the government services bus. The research also concluded that facilitating conditions have an effect on the actual use of the government services bus.

As such, the improvement of the uptake of the e-government services is dependent largely on the improvement and satisfaction of the said factors.

The research made the following recommendations:

1) There is need to set up facility ICT centres at various government ministry service centres fully equipped with computers and fast broadband internet to allow for members of the public to walk in and self access e-based government services.

2) There is need for well planned change management plans to shift from physical services to a deliberate increase of e-based public services, these plans should be all inclusive and taken out to other areas away from urban areas.

3) Increase awareness and sensitisation plans to make know the availability of government services on the government services plan including the assurance of security and trust of the e-systems.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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