FACTORS AFFECTING E-GOVERNMENT ADOPTION IN THE DEMOCRATIC REPUBLIC OF CONGO

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Abstract - *The effectiveness of e-government services is contingent on both government backing and end-user's acceptance. This article examine factors e-government services in the Democratic Republic of Congo (DRC).The Darmawan model was extended to develop an acceptance model taking into account specific context for DRC.*

To get primary data, 100 citizens were polled. The impact of the parameters modified by adding constructs such as information security from the Darmawan's model on e-government adoption was investigated using regression analysis. The reported values of the various constructions in reliability tests is 0.972. The findings show that end-users' e-government behavior is influenced by information confidentiality, integrity, availability, accountability and non-repudiation. Practice and research implications are highlighted.

Key Words: E-government, Democratic Republic of Congo, adoption, end-users, information security,

1. INTRODUCTION

Internet advancement and the progress of information and communication technologies (ICT) provide new ways for governments facilitating interaction with citizens and serve them [1]. The exponential growth of e-government worldwide has enabled the debate about how governments should boost the citizen's acceptance of their online public services [2]. E-government implementations for several nations started in the late 1990s.

Up to now, there really is no clear explanation of e-government, and most definitions focus on the improved delivery of government services to citizens through the use of technology. E-government relates to the use of IT technology by government agencies [3]. Such innovations can represent a range of different purposes, such as people, consumers, clients and workers.

Actually, e-government is no longer seen by government agencies worldwide as an alternative, but as a particularly significant addition to the services provided to people. The quality and reliability of public sector services are seen as the outcome of e-government implementation. E-government offers an important way for people to engage in and to participate in.

As well as a convenient tool for performing online government transactions, to be used in public policy and enable transparency [4]. While accountability and enhanced connectivity and access to information for people have been enhanced by e-government, digital distribution of information is also accomplished at a high price to government entities [5].

One of the governments that has agreed to introduce e-government is the government of the Democratic Republic of Congo (DRC). As one of the steps to build a knowledge-based society, e-government has been launched [6].

Prospective users of e-government services have been categorized into different sectors: the government-to government (G2G) category that covers internal transactions among government agencies, the government-to-business (G2B) category, that covers public-sector contacts with the private sector, and the government-to-citizens (G2C) category, that comprises all electronic services rendered by government entities to citizens.

For the purpose of this study, G2C has been considered for the fact that is structured to take into account factors influencing the level of adoption of online services by citizens in developing countries, such as Democratic Republic of Congo.

Making electronic traditional government transactions may not be the only challenge emerging from e-government systems, since the introduction and implementation of such systems entails a variety of problems, including political, cultural, social, technological, and organizational and human resources issues [7], [8], [9].

Most of times, such issues led to failure of E-government despite efforts engaged by government authorities.

In 2018, the Department of Economic and Social Affairs stipulated that the failure of e-government initiatives are dependent on a variety of factors, including technology issues, trust in security and uncertainty of citizens' needs [10]. In order to supply

economic and social benefits for people, e-government adoption is known to be an important part of e-government progress in developing countries [5].

Thus it is important to gain and assess the DRC citizens' perceptions of e-government as an improvement in their lifestyles by examining the factors affecting the adoption of e-government in the Democratic Republic of Congo and hence, in relation to this latest technological initiative, to explain their response to government.

2. LITTERATURE REVIEW

It is commonly thought that the concept of e-government emerged near 1990 after 50 years of use of information technology (IT) in the sense of the government sector [11],[12].

Meanings of e-government vary based on e-government targets and perspectives, as well as group expectations and beliefs [13].

As further as this study is concerned, we will consider the definition of Gunter [13], specifying that e-government relates to the use of information and communication technology in order to provide public services to people and businesses and includes the transformation of public services accessible to citizens through new organizational processes and new technological trends.

In the implementation of e-government services, adoption performs an un-overlookable position. Lack of citizens' acceptance of e-government services is either a negative symptomatic of ineffective application or a very large indicative parameter of less usage of e-government [15], [16],[17]. Basically, the progress of e-government is dependent on the desire or readiness of the people to embrace and use this information technology [17].

Literature reviews on the implementation and usage of information systems and technology in previous empirical studies indicated the common roles of e-government in several various areas such as electronic government (e-government), electronic commerce (e-commerce), e-learning, etc.

A number of studies have adopted, updated and tested several theoretical models over the last thirty years in attempt to comprehend and forecast the adoption and use of technology [18].

Models adopted and then used from another field and developed by researchers in Information Systems having models such as:

- Theory of Reasoned Action (TRA)
- Theory of Planned Behavior
- Technology Acceptance Model (TAM)
- Diffusion of Innovation Theory (DOI)
- Unified Theory of Acceptance and Use of Technology (UTAUT)
- Darmawan's model Etc.

2.1 Motivators of Adoption and Use of E-government

In order to analyze, examine and understand variables influencing the use of technology in specific contexts, numerous theories and models of technology adoption have been developed.

With different phases emerging, improved, interactive, transactional, and related, the adoption of e-government as a mechanism is continuous. At the transactional level, the online transactions themselves occur [19], [20]. The information security aspect includes achieving this degree of two-way communication. The protection of data is an integral part of systems that are transaction-based.

Several research on technology acceptance concerning the implementation of e-government uses the original type of technology acceptance models and hypotheses, combining them or incorporating explanatory features [21].

However, there is no single model that, under all situations, matches well.

In order to establish some of the main factors which might be critical in affecting the decision to accept and use the technology used in e-government in the context of the Democratic Republic of Congo, an analysis of some of the main technology adoption models was conducted.

A comparison matrix illustrating the identified gaps in the literature regarding the assessment of the adoption and usage of emerging technology services in e-government is provided in Table -1.

Although the Darmawan model [22] did not adequately highlight key information security and confidence factors that could affect the penetration of e-government in an African context when left out, it was considered the most appropriate model to guide the research. This is because the model is an expansion of TAM, an empirically tested model, and the model also includes factors such as adequate quality of the Citizen Trust + Framework, compatibility + knowledge quality, promoting conditions that have been listed among the main factors influencing the adoption of ego government services in the Democratic Republic of Congo (DRC).

For this study, data security and trust factors have been defined from other research and the field survey and incorporated into the Darmawan model as additional e-government adoption requirements.

Table -1: A Summary of Measures for the E-Government Adoption Process

Models and Core Variables													
Name and Year	**Models**	**Perceived Usefulness**	**Perceived Ease of Use**	**Intention to Use**	**Privacy and security**	**Management**	**Willingness to adopt**	**Information Security**	**Facilitating Conditions**	**Social Influence**	**Behavioral Intention**	**Experience**	**Expected Benefit**
Fishbein, M. and Ajzen, I.(1975)	TRA	No	No	No	No	No	No	No	No	Yes	Yes	No	No
Rogers, E.M. (1962)	DOI	No	No	No	No	No	No	No	Yes?	Yes?	Yes?	No	No
Fishbein, M. and Ajzen, I(1980)	TPB	No	No	No	No	No	No	No	Yes?	Yes	Yes	No	No
Davis, F. (1989)	TAM	Yes	Yes	Yes	No	No	No	No	No	Yes?	Yes	No	Yes
Venkatesh and Davis(2000)	TAM2	Yes?	Yes?	No	No	No	Yes	No	Yes?	Yes	Yes?	Yes	Yes
Venaktesh et al.(2003)	UTAUT	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Tassabehji(2005)	N/A	No	No	No	Yes	No	No	No	No	No	No	No	Yes?
Wangwe et al.'s (2012)	TOG	No	No	No	No	No	Yes	Yes	No	No	No	No	No
Alfawaz et al.'s (2008)	FISM	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No
Bwalya & Healy(2010)	ESADEC	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	No
Darmawan's model (2017)	EGAM	Yes	Yes	Yes	Yes	No	Yes	No	No	No	Yes	No	No

Taken together, the results demonstrate that the perceived ease of use, perceived utility, Citizen Confidence, System Efficiency, Compatibility, Information Quality, Promoting Conditions that have been established among the vital factors influencing e-government services adoption. However, Information security considerations are thought to be correlated in the adoption of e-government in the Democratic Republic of Congo's Context.

3. RESEARCH HYPOTHESIS

It is crucial to understand the factors affecting e-government users. There are many acceptance models, as discussed above, which have been commonly used to describe the user acceptance of the Information System. TAM is now one of the many extensively studied models in information system documentation and has been used in a wide variety of information management applications in different consumer samples [29]. The TAM has been updated by several scholars to boost its interpretation abilities. In the field of e-Government [12], [30], [31], [32].

The independent factors proposed by the UTAUT model comprise of performance expectancy, effort expectancy, social influence and facilitating conditions.

Perceived usefulness (PU) is described as the degree to which an individual believes that the use of the actual system would enhance her or his work performance[33]and perceived ease of use (PEOU) as the degree to which an individual believes that using the actual system will be free of mental and physical [34].

In the UTAUT model, social influences factor is described as people's expectations of whether or not most people who are important to them will think that they should conduct the action. In previous research, social influences has shown a significant impact on the intentions of people using technology [35], [36], [37], [38].

In UTAUT, the facilitating conditions in the UTAUT model is described as the objective environmental factors that participants agree to make an act easy to execute, along with the support of computer. It has been demonstrated that, through perceived usefulness and ease of use, facilitating conditions significantly improve user acceptance [39], [40], [41]. Facilitating conditions give the reference manual includes specific guidance on how to use an application, specialist units or staff to operate the e-Government system, and appropriate support resources .

In the Delon & McLean Success model, System quality is characterized as the degree of excellence of the software or system and focuses on the functionality of the user interface, ease of use, system response levels, documentation and quality of the system, ease of maintaining the programming code, and whether the system is bug-free [34].

The quality of service in the successful Delon & McLean model is the quality of the intended system, if the customer is willing or not, and to what degree the system can help users build jobs.

Compatibility is another aspect that is also a critical factor of e-Government adoption [42], [43].

Compatibility is characterized as a state to which an invention is considered to be compatible with potential adopters' current values, needs, and experiences [44].

Compatibility is another aspect that is also an important factor in e-Government adoption. Compatibility is described as the way to which technology is considered to be compatible with the current values, desires and expectations of potential adopters [44].

In addition, there are other factors that are though to impact or promote e-Government adoption.

According to Eseri (2014), Information Security is the mechanism through which the government, as an ongoing process and not as a state at a time, protects and preserves its systems, media, and facilities that preserve information necessary for its security operations [45], described accessibility, confidentiality, transparency, information assurance, and accountability as components of information security. In this study, the capacity of e-government systems to meet confidentiality/privacy, transparency, accountability and trust assets is evaluated in terms of information protection [46].

Focused on an existing literature on the state of the art model for the adoption of technology, particularly in the context of e-Government, 28 hypothesis can be expressed as:

H1: Perceived Ease of Use (PEOU) significantly positive influences the Perceived Usefulness (PU)

H2: Perceived Ease of Use (PEOU) significantly positive influences the Behavioral Intention (BI)

H3: Perceived Usefulness (PU) significantly positive influences the Behavior Intention (BI)

H4: Awareness (Aw) significantly positive influences the

Perceived Ease of Use (PEOU)

H5: Awareness (Aw) significantly positive influences the Perceived Usefulness (PU)

H6: Social Influence (INS) significantly positive influences the Perceived Ease of Use (PEOU)

H7: Social Influence (INS) significantly positive influences the Perceived Usefulness (PU)

H8: Citizen Trust (CT) significantly positive influences the Perceived Ease of Use (PEOU)

H9: Citizen Trust (CT) significantly positive influences the Perceived Usefulness (PU)

H10: Compatibility (COM) significantly positive influences the Perceived Ease of Use (PEOU)

H11: Compatibility (COM) significantly positive influences the Perceived Usefulness (PU)

H12: Information Quality (IQ) significantly positive influences the Perceived Ease of Use (PEOU)

H13: Information Quality (IQ) significantly positive influences the Perceived Usefulness (PU)

H14: System Quality (SQ) significantly positive influences the Perceived Ease of Use (PEOU)

H15: System Quality (SQ) significantly positive influences the Perceived Usefulness (PU)

H16: Service Quality (SEQ) significantly positive influences the Perceived Ease of Use (PEOU)

H17: Service Quality (SEQ) significantly positive influences the Perceived Usefulness (PU)

H18: Facilitating Conditions (FC) significantly positive influences the Perceived Ease of Use (PEOU)

H19: Facilitating Conditions (FC) significantly positive influences the Perceived Usefulness (PU)

H20: Behaviour Intention (BI) significantly positive influences the E-Government Adoption (EA)

H21: Confidentiality (CONF) significantly positive influences the Perceived Ease of Use (PEOU)

H22: Confidentiality (CONF) significantly positive influences the Perceived Usefulness (PU)

H23: Integrity (INT) significantly positive influences the Perceived Ease of Use (PEOU)

H24: Integrity (INT) significantly positive influences the Perceived Usefulness (PU)

H23: Availability (AV) significantly positive influences the Perceived Ease of Use (PEOU)

H24: Availability (AV) significantly positive influences the Perceived Usefulness (PU)

H25: Accountability (AC) significantly positive influences the Perceived Ease of Use (PEOU)

H26: Accountability (AC) significantly positive influences the Perceived Usefulness (PU)

H27: Non-repudiation (NR) significantly positive influences the Perceived Ease of Use (PEOU)

H28: Non-repudiation (NR) significantly positive influences the Perceived Usefulness (PU)

4. METHODOLOGY

As the primary data collection tool for this analysis, a quantitative research approach using a survey questionnaire was chosen. As it is affordable, less time consuming and has the potential to include both quantitative and qualitative data from a broad research sample, a survey questionnaire was used [23], [24], [25].

For the purpose of this research, the instrument of data collection consisted of: a) a formal questionnaire and b) the guidelines for the semi-structured interviews.

A structured questionnaire containing a pre-formulated written of 52 items and semi-structured interview set of statements adopted from studies found in the literature into both E-government and technology acceptance [26], [21], [22], [18], will be the main data collection tool, with a few modifications.

The following are the reasons for using a questionnaire as the main tool for collecting data:

- Quantifiable information regarding the behavior intentions of the study population in order to design the adoption model to use e-government services is needed.
- A questionnaire can be administered concurrently to a large number of individuals; it is less costly, less time-consuming and requires less expertise compared to the interview [27].

A cross-sectional time horizon was used in this study rather than a longitudinal one, which means that a large amount of data from both DRC residents and government officials responsible for implementing e-government services was collected only once and within a relatively short period of time.

In the survey, the strength of opinion will be measured by a 5-point Likert scale where respondents could choose “Strongly agree” to' “Strongly disagree”.

The questionnaire was administered between the months of December 2020 and January 2021 to a total of 426 people. 385 responses were collected from 426 questionnaires distributed.

As mentioned earlier, the questionnaire provided participants with a brief description of the aim of the study, and participation was on a strictly voluntary basis. In an atmosphere free of external constraints. After a time of about 13 minutes, the questionnaires were obtained from the participants.

5. DATA ANALYSIS

The first phase of the data analysis to verify the answers of the questions consisted of testing the answers and marking them with a unique id. By using SPSSS, the authors developed descriptive statistics and used regression analysis. Descriptive data analysis offers the reader an understanding of the real numbers and values, and also the degree to which researchers deal with them [28].

5.1. Reliability of the Model

The degree to which a measuring instrument (questionnaire) produces reliable results is referred to as reliability (Ayodele, 2012; Kothari, 2005). That is, a tool's stability and dependability, or whether it is error-free and therefore obtains accurate data. Stability of constructs and instrument stability over time are two examples of reliability tests. In this case, questionnaire reliability was checked to see whether the various sections of the questionnaire, such as the section on Social Influence, the section on confidentiality, integrity, availability, citizen trust and others produced consistent results.

Internal consistency was determined using Cronbach's coefficient alpha, with a recommended level of Cronbach's Alpha of more than 0.60. (Mukerji et al., 2012). For the purpose of this study, the Table –3 shows that the Cronbach's Alpha was calculated to 0,970, meaning our constructs are consistent to measure end-users adoption in the DRC.

The factors Social Influences, Citizen Trust, Compatibility, Awareness & Training, Information Quality, System Quality, Service Quality, Facilitating Conditions, Perceived Ease of Use, Perceived Usefulness, Behavioural Intention, Confidentiality, Integrity, Availability, Accountability, and Non-repudiation were analyzed using Cronbach's alpha value to measure the internal consistency of these factors evaluating e-government services adoption from an information security perspective to ensure instrument reliability and have trust in the findings. According to Mukerji et al. (2012), Cronbach's alpha greater than 0.60

indicates reasonable and satisfactory reliability, greater than 0.70 indicates decent reliability, and greater than 0.95 indicates very good reliability in correcting accurate answers. For science, reliability values of 0.65 to 0.92 are considered suitable (Babin et al., 2011).

To assess the reliability of the items used in the study constructs, an assessment was carried out. The analysis used Stata (Version 10) to look at all of the following items: mean, standard deviation, skewness, Kurtosis with the appropriate importance degree .The mean is the average of the measurements over the sample or population, represented symbolically as:

$\bar{x} = (\Sigma xi) / n$

With:

- $\bar{x}$ is the sample mean
- Σ is summation notation
- xi is the measurement of individual
- n is the sample size

The mean, as well as other statistics such as Skewness and Kurtosis, were used to determine the distribution of the indicators under investigation. Skewness is a measure of a distribution's symmetry, and Kurtosis is the distribution's peak (Shailendra, 2018). A negative skewness value indicates a skewed distribution to the left, while a positive skewness value indicates a skewed distribution to the right. The following is the basic formula for calculating the statistic:

$Skewness = \sum Ni\ (Xi - \bar{x})3 / (N-1) * \sigma 3,$

Where:

- Xi = Random Variable
- $\bar{x}$= Mean of the Distribution
- N = Number of Variables in the Distribution
- Ơ = Standard Deviation

A normal distribution has zero skewness, and any symmetric data should have skewness close to zero. Negative skewness values indicate data that is skewed left, whereas positive skewness values indicate data that is skewed correct. The term "skewed left" refers to the length of the left tail in comparison to the right tail. Skewed right, on the other hand, means that the right tail is longer than the left tail.

The absolute peakedness of the mean in distribution is measured by kurtosis. Low kurtosis is associated with a flat top near the mean and a heavy tail in one direction, whereas high kurtosis is associated with a high peak near the mean with a heavy tail in one direction. The kurtosis figure is expressed symbolically as follows:

$Kurtosis = \sum Ni\ (Xi - \bar{x})4 / (N-1) * \sigma 4$

Low skewness and kurtosis are all correlated with high probability values, suggesting a normal distribution for the constructed variable (Joanes et al., 1998), as seen in Table .1.

We consider skewness values between -3 and +3. Under the Z ratings, all of the item values in table1 are regular. We look at kurtosis values between – 4 and +4 for the kurtosis.

Table 1 shows that most research variables are normally distributed (p-value 0.1) as a result of cross-sectional survey data collection. CONF1 (mean=1.95, kurtosis=, 316; Skewness=, 278), for example, shows that CONF1 is at normal distribution at the 1% level of significance. At 5% importance, the item CONF2 (mean=2.00, Skewness=, 722; kurtosis=1,903) is also normally distributed. This indicates that the construct is important and relevant to the research.

According to CONF1, responses to the question "Access to information in e-government systems should be accessible to allowed e-government users only» were normally distributed. Although the majority of the respondents agreed, a non-negligible number disagreed.

Likewise, four indicators in the Integrity construct were classified normally (, 946; 2,528; 3,441 and 1,322). This indicates that, in the eyes of end-users of e-government services, the integrity was positive and slightly above their usual expectations.

In addition, the findings of this study's construct analysis show that Confidentiality, Integrity, Availability, Accountability and Non-Repudiation had normality distributions. The information found in each of the five constructs indicators that display normal distribution is representative, and we can use it to draw inferences about the population, according to the results of these analyses. Second, the indicators' normality allows for more in-depth research without the need for transformation. Finally, this shows that the sample size was calculated correctly and statistically, with minimal errors.

Table -1: Statistical Reliability of Items

	N	Mean	S.Deviation	Skewness	Kurtosis
SI1	100	2,14	,725	,591	,620
SI2	100	2,18	,770	,759	,630
SI3	100	2,45	,845	,825	-,364
SI4	100	2,10	,674	,888	1,724
Social Influence	**100**	**2,22**	**,486**	**,848**	**,487**
CT1	100	2,14	,804	,571	,146
CT2	100	2,27	,802	,667	,185
CT3	100	2,16	,735	,518	,405
Citizen Trust	**100**	**2,19**	**,620**	**,373**	**,527**
COMP1	100	2,13	,677	,436	,573
COMP2	100	2,03	,674	,774	1,601
Compatibility	**100**	**2,08**	**,614**	**,422**	**1,129**
AWR1	100	2,60	,921	,649	-,417
AWR2	100	2,55	,880	,570	,042
AWR3	100	1,79	,701	,676	,599
AWR4	100	2,21	,832	,552	,501
Awareness	**100**	**2,29**	**,485**	**,351**	**,646**
INFOQUAL1	100	2,37	,884	,808	,172
INFOQUAL2	100	2,54	,958	,341	-,675
INFOQUAL3	100	2,56	,988	,022	-1,025
Information Quality	**100**	**2,49**	,823	**,434**	**-,653**
SYQUAL1	100	2,51	,772	-,101	-,330
SYQUAL2	100	2,39	,827	,359	-,346
SYQUAL3	100	2,57	,956	,468	-,455
SystemQuality	**100**	**2,49**	**,677**	**,088**	**,357**
SERQUAL1	100	2,45	,936	,412	-,430
Q19B	100	2,26	,747	,573	,321
ServiceQuality	**100**	**2,35**	**,756**	**,383**	**,403**
FACOND1	100	2,20	,816	,750	,923
FACOND2	100	2,52	,847	,395	-,603
FACOND3	100	2,40	,765	,414	-,124
FACOND4	100	2,29	,756	,747	,434
Facilitating Conditions	**100**	**2,35**	**,462**	**,924**	**2,288**
PEOU1	100	2,30	,870	1,060	1,569
PEOU2	100	2,19	,748	,708	1,468
PEOU13	100	2,21	,701	,943	2,321
PEOU4	100	2,56	,808	,857	1,094
PerceivedEU	**100**	**2,31**	**,65097**	**1,043**	**2,829**

PU1	100	1,89	,650	,110	-,609
PU2	100	1,87	,849	1,063	1,427
PU3	100	2,04	,887	,631	-,204
PU4	100	2,18	,687	,132	-,120
PU5	100	1,91	,698	,488	,369
PU6	100	1,85	,672	,593	,867
Perceived Usefulness	**100**	**1,95**	**,61574**	**,182**	**-,415**
BI1	100	2,51	,904	,638	,377
BI2	100	2,08	,677	1,298	4,051
BI3	100	2,11	,680	1,041	3,212
BI4	100	2,11	,634	,637	1,370
BI5	100	2,06	,565	1,728	8,260
Bihavioral Intention	**100**	**2,17**	**,54135**	**,343**	**1,907**
CONF1	100	1,95	,642	,278	,316
CONF2	100	2,00	,636	,722	1,903
CONF3	100	2,11	,777	,332	-,210
Q24D	100	1,92	,598	,026	-,165
Confidentiality	**100**	**1,99**	**,55160**	**-,268**	**,109**
INT1	100	1,94	,600	,307	,946
INT2	100	1,98	,752	1,052	2,528
INT3	100	1,93	,671	,902	3,441
INT4	100	2,11	,777	,728	1,322
Integrity	**100**	**1,99**	**,587**	**,087**	**,612**
AV1	100	1,82	,575	,015	-,180
AV2	100	2,15	,845	,628	,549
Availability	**100**	**1,99**	**,637**	**,117**	**,299**
ACC1	100	1,81	,615	,133	-,456
ACC2	100	2,02	,724	,458	,278
Accountability	**100**	**1,92**	**,581**	**-,014**	**-,261**
NONR1	100	2,01	,659	,422	,692
NONR2	100	2,10	,689	,813	2,566
Nonrepudiation	**100**	**2,05**	**,581**	**,136**	**,904**
Valid N (listwise)	100				

Table -3. Reliability statistics for the model

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,970	,972	83

Content validity, construct validity, and reliability were among the instrument validation techniques used in this study. The researcher used content validity (interviews) as a pre-data collection validity, and construct validity and reliability as a post-data collection validity, in order to have a reliable survey instrument and hence confidence in the research findings. In IS research, these validity methodologies are recognized as best practices [48]. The internal research consistency of measurement was evaluated using Cronbach's coefficient alpha value.

Cronbach's coefficient alpha values were chosen to observe the measure's internal consistency, according to Hinton et al. (2004). In addition, four dependability ranges were proposed: good (0.90 and higher), high (0.70 – 0.90), high moderate (0.50 – 0.70),

and poor (0.50 – 0.70). (0.50 and lower). Table -3 shows the Cronbach's alpha values for our instrument at 0.97, respectively, showing that the constructs are internally consistent and reliability is tested for the same construct.

5.2. Regression Analysis

Since the guided model has been validated in Darmawan's study taking into account human, technology, organization dimension, Information Security factors (Confidentiality, Integrity, Availability,Accountability, Non-Repudiation) were used as predictor factors in a regression study with E-government usage(E-government Adoption) as the dependent variable. Table -3 shows that a significant model emerged from the investigation, with an adjusted R square of 0,649. In relation with our hypothesis, it has been shown in the results that almost all of hypothesizes were supported, and that only one hypothesis is partially supported, this is thought to be related the small sample size used (Table -5).

Table –4. Regression Analysis: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,617a	,681	,649	,399

a. Predictors: (Constant), NonRepudiation, IntegrityAvailability, Accountability, Confidentiality

b. Dependent Variable: E-government Services Usage (E-government Adoption)

Table -5. Summary of hypotheses tests of e- government adoption model

	Hypotheses	**Correlation Coefficient**	**Supported**
H1a	PEOU → PU	0,540**	Yes
H1b	PEOU → BI	0,673**	Yes
H2	Pu → BI	0,554**	Yes
H3a	Aw → PEOU	0,542**	Yes
H3b	Aw → PU	0,405**	Yes
H4a	SOCIN → PEOU	0,382**	Yes
H4b	SOCIN → PU	0,211**	Yes
H5a	CT → PEOU	0,505**	Yes
H5b	CT → PU	0,411**	Yes
H6a	COM → PEOU	0,553**	Yes
H6b	COM → PU	0,558**	Yes
H7a	InfoQual → PEOU	0,067**	Yes
H7b	InfoQual → PU	0,400**	Yes
H8a	SysQual → PEOU	0,513**	Yes
H8b	SysQual → PU	0,537**	Yes
H9a	SerQual → PEOU	0,624**	Yes
H9b	SerQual → PU	0,563**	Yes
H10a	FaCond→ PEOU	0,487**	Yes
H10b	FaCond → PU	0,336**	Yes
H11	BI→ EgovA	0,406**	Yes
H12a	CONF→ PEOU	0,552**	Yes
H12b	CONF → PU	0,750**	Yes
H13a	INT→ PEOU	0,610**	Yes
H13b	INT → PU	0,703**	Yes
H14a	AV→ PEOU	0,599**	Yes

H14b	AV → PU	0,658**	Yes
H15a	ACC→ PEOU	0,599**	Yes
H15b	ACC→ PU	0,658**	Yes
H16a	NonR→ PEOU	0,544**	Yes
H16b	NonR→ PU	0,541**	Yes

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Model fit

Multiple model fit criteria were generated using Amos to evaluate the overall fit of the model, as described in the literature [49]. There were seven goodness-of-fit indexes utilized. Many studies on IS success research employ the aforementioned model-fit metrics. According to Chiu et al.[50], the value of chi-square divided by degrees of freedom (/d.f.) for a measurement model should not exceed 3, the Comparative Fit Index (CFI) should be higher than 9, the Non-Normed Fit Index (NNFI) should be higher than 9, and the Root Mean Square Error of Approximation (RMSEA) value should be less than 0.08. According to Anderson and Gerbing [52], RMSEA values less than 0.1 are acceptable.

The overall model fit indices determined by AMOS software are shown in Table -6. It demonstrates that all indices clearly above the stated ideal standard values for a successful model fit, indicating that the model had achieved a satisfactory level and could be utilized to explain the assumptions. As a result, the path coefficients for each separate structural model hypothesis were examined next.

Table - 6. Indicators of model fit for the study model

Fit index	Scores	Recommended value	Accepted Fit
/d.f	1.502	<5.00	Yes
CFI	0.912	>0.90	Yes
NFI	0.900	>0.90	Yes
NNFI	0.912	>0.90	Yes
IFI	0.907	>0.90	Yes
GFI	0.911	>0.90	Yes
AGFI	0.801	>0.80	Yes
RMSEA	0.034	<0.08	Yes

The results of the aforementioned validation criteria that influenced e-government adoption in the Democratic Republic of Congo are depicted in Figure 1.

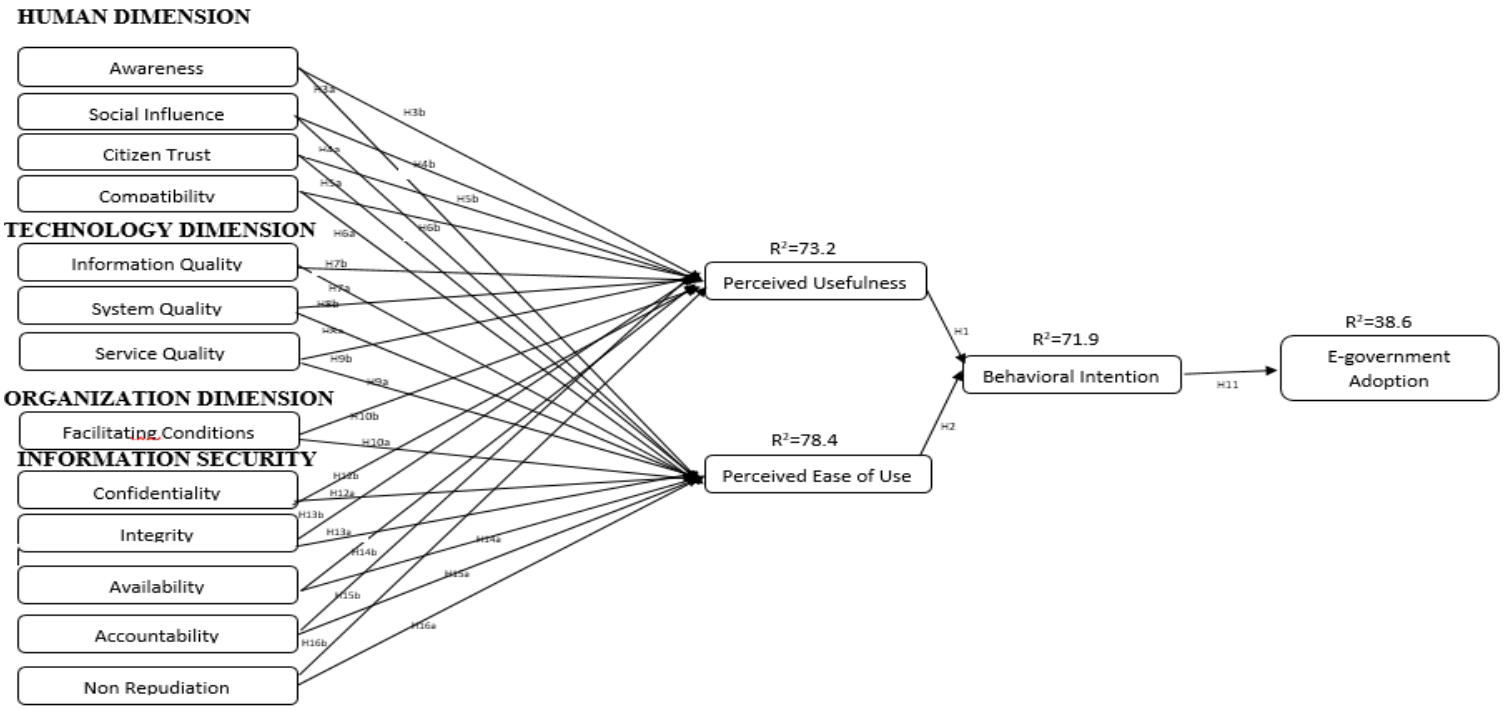

Figure 1: Validated Model of Factors Affecting E-government Adoption in the Democratic Republic of Congo

6. DISCUSSION AND CONCLUSION

This study presented the findings of a data analysis of a survey that was undertaken to investigate end-user's adoption and use of Democratic Republic of Congo e-government services. The results were presented in several areas. The first stage was to talk about the validation and results of the e-government system's adoption. The findings in this part demonstrated that the reliability test was confirmed and that the measures were internally consistent, since all of the constructs had a Cronbach's alpha of 0.972.

According to descriptive statistics, all of the constructs scored highly on the (1-5) likert scale. As a result, the respondents expressed high agreement with the study's elements for analyzing the adoption of the e-government system (See Graphics in Appendices section).

Confidentiality, Integrity, Availability, Accountability, Non-Repudiation significantly explain Behavioural Intentions to Adopt E-Government, according to linear regression analysis.

The current study is unique in the Democratic Republic of Congo context since it focuses on the user's perspective, which can be used as a foundation for future e-government adoption studies in DRC and other Central Africa Regions. Second, the study's practical implications include assisting government policymakers and decision-makers in the design and implementation of e-government services in the Democratic Republic of the Congo. They should, for example, develop rules and initiatives that prioritize Information Security factors in e-government services.

Although the findings of this study are intriguing, they are restricted to a small population of e-government service users. As a result, future research should look at the perspectives of non-adopters of e-government services. This research can also be expanded by using the UTAUT model moderators (age, gender, and experience) as well as additional variables including culture, trust, and socioeconomic restrictions. As a result, more study is required to overcome these constraints.

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