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## **Employee Acceptance of E-Government in Developing Nations**

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### **ABSTRACT**

Internal service providers usually create e-government, frequently ignoring the service end user. Without giving the service user's wants and expectations enough thought during the design process, subsequent service delivery may be in danger. However, it might be challenging for the service provider to fulfil the expectations and wants of potential users and include them in an iterative design process when creating e-services for a diverse user base.

By concentrating on the deployment of an e-government system, this study tackles the challenge of identifying the elements that motivate workers to embrace ICT technologies used in developing nations. Relevant data were used in the development of the Unified Theory of Acceptance and Usage of Technology (UTAUT) and its modified version (UTAUT2).

**Keywords:** technology acceptance, employees, UTAUT

### **1. Introduction**

Since the United Nations made its initial attempt to benchmark e-government in 2001, e-government has expanded quickly over the last 15 years. Compared to just 10 nations in 2003, 29 countries in the 2016 Survey received "very high" scores, with e-government development index (EGDI) values ranging from 0.75 to 1.00. Every one of the United Nations' 193 members has established an internet presence since 2014. Compared to 2003, when 18 countries, or roughly 10% of all governments worldwide, lacked an internet presence, e-government is now commonplace in many more countries. Compared to nearly 73% of countries in 2003, 51% of countries in 2016 had "low EGDI" or "medium EGDI" levels (UN, 2016).

Given the growth of the Internet and its use in contemporary public organizations, it is imperative to research ICT and its effects on public administration, claim (Putra Tampi et al., 2022). A virtual government has been created by connecting people through the Internet. This was not feasible until the mid-1990s, when the Internet's quick ascent through commercialization allowed for widespread public use. Numerous workplace responsibilities have been altered by this networked organization, making it worthwhile to investigate how ICT affects public administration in this significant and novel setting. ICT can be used to share information within a more specialized internal environment in addition to interfacing with the external environment. Internal sharing makes it easier for people to share information by giving pertinent stakeholders a single source of information.

In order to create an environment where technology is more readily accepted and used after implementation, decision makers can develop strategies to assist individuals in adapting to the new technology more effectively and efficiently by identifying the factors that influence employees' acceptance and use of it.

## 2. Related Works

Since ICT is becoming more and more common in society, public managers must know how to successfully deploy new technology in order to achieve the desired results. They should be able to identify which subset of workers may be more hesitant or slow to adopt new technologies and whether there is a certain group that tends to accept them more quickly than others. (Mourtzis et al., 2022; Sinclair, 2006) states, "Policymakers must be able to modify their implementation structures by responding to the responses they observe if they are to have any chance of success." A public administrator can create an atmosphere that supports a successful and efficient implementation experience by knowing what factors influence a person's acceptance and use of technology.

Many theoretical frameworks have been put up to explain the factors that influence technology acceptability as a result of the growing use of ICT. Venkatesh and associates created the Unified Theory of Acceptance and Use of Technology (UTAUT) paradigm in an effort to harmonize the current frameworks (Venkatesh et al., 2003). Over time, it has undergone empirical testing, looking at how different fields absorb technology. Despite being a popular model, it only explains around 56% of the variation in people's intentions to use technology. In order to improve the original and take into consideration additional variance, the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) was created. But there isn't much study on the revised UTAUT2 model (Venkatesh et al., 2012).

According to (Venkatesh et al., 2003) "For technologies to improve productivity, they must be accepted and used by employees in organizations". This study can be used to help managers understand what works best when adopting IT by applying the Unified Theory of Acceptance and Usage of Technology (UTAUT), (Venkatesh et al., 2003). There is a clear study deficit on employees' use of ICT in the review of UTAUT literature. Searching many academic search engines reveals the scarcity of UTAUT studies applied from the viewpoints of employees, as illustrated in Figure 1.

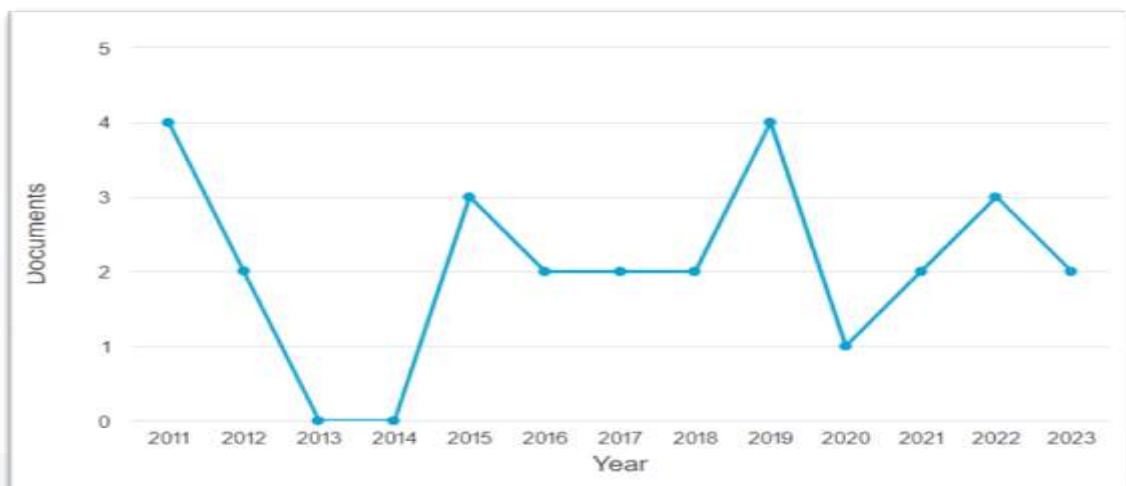


Figure 1: Show the rarity of UTAUT studies as applied from employees' perspectives

UTAUT2, or the Unified Theory of Acceptance and Use of Technology, Hundreds of

research from a wide range of fields have utilized the UTAUT as their preferred model for analyzing employee technology adoption. After revision, the UTAUT2 was able to explain 52% of the variance in technology use and 74% of the variance in behavioral intention. Three new constructs were included to the model in order to achieve such a significant shift: hedonic motivation (HM), price value (PV), and habit (HAB) (Venkatesh et al., 2012).

As information and communication technologies (ICTs) have advanced, several models have been developed to study factors that influence user adoption. To give researchers an updated, comprehensive user acceptance model, Venkatesh and colleagues (2003) consolidated existing acceptance models to create the Unified Theory of Acceptance and Use of Technology (UTAUT) model. Diffusion innovation theory (DOI), the theory of planned behavior (TPB), the motivational model (MM), the theory of reasoned action (TRA), the technology acceptance model (TAM), the model of PC utilization, the theory of planned behavior and a model combining the TAM and TPB, and social cognitive theory were all compared and investigated. Four of the eight models—PE, EE, SI, and FC—were hypothesized to have a direct, substantial impact on both BI and actual use, while seven of the models explained intention to adopt a new technology. Moderators like age, gender, experience, and voluntary use had an effect on each construct (Venkatesh et al., 2003).

Following its creation, the UTAUT was used as the foundation for numerous research projects spanning a wide range of fields and technological advancements. Nevertheless, the model's extensions were included into its application, and only portions of the moderators were being employed (Venkatesh et al., 2012). Following a thorough investigation, the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model was created by Venkatesh, Thong, and Xu (2012), who built on the UTAUT.

### 3. Methodology

The Scopus database was selected for this study, and only Scopus-indexed publications were used. A title search was conducted using the three keywords, which are:

1. "UTAUT" OR "unified theory of acceptance and usage of technology".
2. "e-government" OR "electronic government" OR "digital government".
3. "Employees".

According to Scopus database, the results of this search was 27 articles. After that going to filter the results by choosing specific criteria as following:

1. Filter by Subject area, where this stud focus on 2 discipline which are computer science and social sciences.
2. Filter by document type, where this stud focus on article and conference paper only.
3. Filter by source type, where this stud focus on journal article and conference proceeding only.

After filtering, this search yielded 12 items, the first of which was published in 2011. The first phase involved analyzing the abstracts of these articles and determining that all of them were

pertinent and deemed to be analyses for the bibliometric aspects. The second phase involved extracting the bibliometric report from the Scopus database and producing the relative productive information. In order to determine the elements impacting employees' adoption of e-government in developing nations, a comprehensive study of these papers was finally carried out.

#### 4. Results and Discussion

The results of the bibliometric survey were derived from the examination of 27 publications that were retrieved from the indexing databases. Despite the fact that UTAUT theory was first developed in 2012, Figure 1 illustrates that the first e-government study to use UTAUT theory from an employee perspective was conducted in 2012. As seen in Table 1, the majority of these 27 publications came from the fields of computer science and business, management, and accounting, according to the Scopus database.

**Table 1: Sorted articles in number of results and subject**

No	discipline	Results	No	Discipline	Results
1	Computer Science	17	5	Decision Sciences	4
2	Business, Management & Accounting	7	6	Economics & Finance	3
3	Social Sciences	4	7	Mathematics	2
4	Engineering	4	8	Energy	1

Following a bibliometric analysis, the study domain was covered. In order to identify the factors influencing this occurrence of UTAUT-based research, only 12 articles were located and examined.

These factors from 12 articles are displayed in Table 2.

**Table 2: Factors in E-government studies through UTAUT Theory from employees' perspective.**

No.	Title & Source	DVs	IVs	Moderator	Mediator
1	Challenges Facing E-government Implementation and Adoption in the Era of 5G, 6G (Zeebaree et al., 2023)	<ul style="list-style-type: none"> <li>Behavioral Intentions</li> <li>Usage</li> <li>Performance Expectancy</li> </ul>	<ul style="list-style-type: none"> <li>Performance Expectancy</li> <li>Effort Expectancy</li> <li>Social Influence</li> <li>Facilitating Conditions</li> <li>Ethics of Internet</li> <li>Trust of System</li> </ul>	Age Gender	N/A
2	The Influence of Perceived Confidentiality Risks and Attitude on Tanzania Government Employees' Intention to Adopt Web 2.0 and Social Media for Work-Related Purposes (Mhina et al., 2019)	<ul style="list-style-type: none"> <li>Behavioral Intentions</li> <li>Attitude</li> </ul>	<ul style="list-style-type: none"> <li>Performance Expectancy</li> <li>Effort Expectancy</li> <li>Social Influence</li> <li>Facilitating Conditions</li> <li>Perceived confidentiality risks</li> </ul>	N/A	N/A

3	How robust is the UTAUT theory in explaining the usage intention of e-government services in an unstable security context?: A study in Iraq (Al-Swidi & Faaeq, 2019)	<ul style="list-style-type: none"> <li>• Usage Behavior</li> <li>• Usage Intentions</li> <li>• Performance Expectancy</li> <li>• Effort Expectancy</li> </ul>	<ul style="list-style-type: none"> <li>• Performance Expectancy</li> <li>• Effort Expectancy</li> <li>• Social Influence</li> <li>• Facilitating Conditions</li> <li>• Awareness</li> </ul>	N/A	Usage Behavior
4	Electronic tax filing adoption in Jordan: The tax employees' perspectives, (Alibraheem, M.H., Abdul-Jabbar, H., Ibrahim, 2019)		<ul style="list-style-type: none"> <li>• Performance Expectancy</li> <li>• Effort Expectancy</li> <li>• Social Influence</li> <li>• Facilitating Conditions</li> </ul>	N/A	N/A
5	Government Employees' Adoption of Information Technology - A Literature Review (Rehouma & Hofmann, 2018)	<ul style="list-style-type: none"> <li>• Usage Intentions</li> </ul>	A Literature Review for all previous acceptance theory	N/A	N/A
6	A multivariate analysis of the determinants for adoption and use of the Document Workflow Management System in Botswana's public sector; (Mosweu & Bwalya, 2018).	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Performance Expectancy</li> <li>• Effort Expectancy</li> <li>• Social Influence</li> <li>• Facilitating Conditions</li> </ul>	Age Gender	
7	Exploring the adoption of mobile applications: Case studies in government agencies in Oman; (Al-Azizi, Al-Badi, Al-Zrafi, & Sharma, 2017).	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Performance Expectancy</li> <li>• Effort Expectancy</li> <li>• Facilitating Conditions</li> </ul>	Age Gender Experience awareness	
8	The Effect of Social Influence and Facilitating Conditions on E-government Acceptance from the Individual Employees' Perspective, (Alraja, 2016)	<ul style="list-style-type: none"> <li>• Behavioral Intentions</li> </ul>	<ul style="list-style-type: none"> <li>• Social Influence</li> <li>• Facilitating Conditions</li> </ul>	N/A	N/A
9	The influence of effort and performance expectancy on employees to adopt E-government: Evidence from Oman, (Alraja et al., 2016)		<ul style="list-style-type: none"> <li>• Performance Expectancy</li> <li>• Effort Expectancy</li> </ul>	N/A	N/A
10	E-government services in developing countries: A success adoption model from an employees' perspective, (Ibrahim & Zakaria, 2016)	<ul style="list-style-type: none"> <li>• Behavioral Intentions</li> <li>• Usage</li> </ul>	<ul style="list-style-type: none"> <li>• Performance Expectancy</li> <li>• Effort Expectancy</li> <li>• Social Influence</li> <li>• Facilitating Conditions</li> </ul>	N/A	N/A

			<ul style="list-style-type: none"> <li>• Awareness</li> <li>• website quality</li> <li>• Computer-self-efficiency</li> <li>• IT workforce capability</li> <li>• Training</li> </ul>		
11	Determinants of User Acceptance of a Local e-government Electronic Document Management System (EDMS) (Afonso et al., 2012)	<ul style="list-style-type: none"> <li>• Intention of Use</li> <li>• Use Behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Performance Expectancy</li> <li>• Effort Expectancy</li> <li>• Social Influence</li> <li>• Facilitating Conditions</li> </ul>	N/A	N/A
12	An empirical study of the readiness of public servants on the adoption of e-government, (Olatubosun & Rao, 2012)		<ul style="list-style-type: none"> <li>• Performance Expectancy</li> <li>• Effort Expectancy</li> <li>• Social Influence</li> <li>• Self-efficacy                             <ul style="list-style-type: none"> <li>• Anxiety</li> <li>• Attitude</li> </ul> </li> <li>• Behavioral Intention</li> </ul>	Gender Age	

Performance expectancy, effort expectancy, social influence, and facilitating conditions are defined by Venkatesh et al. (2003) and (2012) as a combination of previous findings, including website quality, training, and IT staff competency (Moore & Benbasat, 1991). Therefore, other components were discarded and just the UTAUT construct was employed in this review to prevent redundancy.

Technology Attitude: "A person's overall effective reaction to using a system" is what Venkatesh et al. (2003) define as attitude toward the usage of technology. This includes internal drive, attitudes toward behavior, and impacts toward use. It gauges a person's attitude toward the technology under consideration, not technology in general. It was expected that attitude toward technology had no discernible impact on behavioral intentions since in certain situations, it was found to have a considerable effect, while in others, it was found to be inconsequential (Venkatesh et al., 2003). Age, however, has been found by other study to moderate attitudes toward technology (Elias et al., 2012; Siswanto et al., 2018).

According to (Zeebaree et al., 2023) and (Mhina et al., 2019) these studies were conducted in voluntary environment and this study are conducted in in mandatory environment, so the Ethics of Internet, Trust of System and Perceived confidentiality risks are dropped. The findings of this study evaluation, which were taken from UATUT and other relevant earlier research, indicate that a variety of factors influence an employee's acceptance of e-government technology in the workplace. As seen in Table 3, a model can then be constructed to represent the variables that affect employees' adoption of technology.

**Table 3: Factors that were operationally defined and taken from this review**

Factor	Operational definitions
Performance Expectancy	To what extent an employee perceives using the system will help him to

	achieve employment efficiency benefits.
Effort Expectancy	The level of ease with using the system.
Social Influence	To what extent an employee recognizes that other people think he or she had better use the system.
Facilitating Conditions	To what extent an employee perceives that an organizational and infrastructure occurs to support using the system.
Awareness	To what extent the employees are aware that e-government technology is introduced.
Anxiety	The extent to which a user experiences fear temporarily when considering using the system.
Computer Self-Efficacy	One believes that in particular circumstances, one can achieve success.

## 5. Conclusion

Finding and comprehending the primary elements influencing employees' acceptance and utilization of e-government technology is the aim of this review. The IT theory (Venkatesh et al., 2012) is used in this study to create a solid analysis that considers prior findings as a review of earlier research. The purpose of this study is to provide further information about the elements that influence an employee's acceptance and use of e-government apps. In order to replace online services, e-government is meant to provide people and employees with helpful information and services.

The main elements that are essential to improving workplace technology adoption have been identified by this study. After reviewing earlier research on e-government adoption with relevant participants, this study's survey identified the set of elements that need to be taken into account when creating a successful application. This review serves as the basis for this paper's identification of the essential elements needed to create a successful technology acceptance model.

Finally, UTAUT still need verification in more situations and perspectives, even though it has been around for a while and has even been upgraded since 2003. More work can be done in the future, as evidenced by the paucity of technological acceptance study studies in the G2E field.

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