

-RESEARCH ARTICLE-

THE IMPACT OF EMPLOYEES' RESISTANCE TO CHANGE ON E-GOVERNMENT INNOVATION AND VALUE CREATION

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—Abstract—

In recent years, the E-government system has evolved into an innovative tool for enhancing the efficiency of government operations. Despite this improvement, e-government programs still encounter several hurdles, such as employees' aversion to change. This study examines the influence of employees' reluctance to change on e-government innovation and the production of e-government value. The research study's constructs were assessed using the survey responses of 437 government employees as the sample. Smart PLS software was utilized to analyze the gathered data. According to the study's findings, employee resistance to change has a major impact on the success of e-government innovation and organizational agility. The results also reveal that e-government innovation substantially affects organizational agility and the generation of e-government value. In addition, the study demonstrates that organizational agility has a substantial effect on e-government value creation. To ensure the success of e-government innovation, it is anticipated that the findings of this study will offer researchers and practitioners a solid understanding of the significance of managing employees' resistance to change.

Keywords: E-government innovation, E-government value creation, employees' resistance, organizational agility.

1. INTRODUCTION

Typically, the implementation of new technological applications in the workplace necessitates adjustments to the way work is performed. Employees naturally resist such changes and seek to maintain the status quo (Cooper, 2018). Due to employees'

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unwillingness to change, firms will typically encounter difficulties when attempting to acquire current technology (Meiyanti et al., 2018). Acceptance or reluctance to implement fresh ideas has always been a crucial issue in human resource management, according to Kalvet (2012). A previous study (Agboola et al., 2011; Singh, 2015) demonstrates that employees' resistance to change strongly impacts the success or failure of organizational transformation. Human resources have a crucial role in enhancing a company's dynamic capabilities, such as creativity, organizational agility, novel technology uptake, and value generation (Ebbers et al., 2007; Ogola et al., 2021). Trawnih, A., & Bechkoum, K. In terms of tactics and government initiatives, Jordan lags behind developed nations in terms of e-government development, according to a 2018 study. Jordan is a member of societies with a high aversion to uncertainty and resistance to changes in life and organization. Hofstede (1991), utilizing components of his cultural dimension theory, found that people in Arab nations such as Jordan tend to be highly influenced by uncertainty avoidance, which inhibits their propensity to utilize technology or creative solutions.

In recent years, governments have replaced their old means of executing tasks involving residents and businesses with electronic transactions (Meiyanti et al., 2018). Governments have also been employing contemporary technology to improve their stockholders' services in novel ways that encourage them to adopt and continue to use these services (Apriliyanti et al., 2021). Several years ago, e-government was effectively established by incorporating novel technologies such as artificial intelligence, geographic information systems, big data, virtual reality, and Twitter feeds, among others (Ogola et al., 2021).

Despite the slow adoption of digitization by public organizations, the government sector has experienced a wave of progress due to e-government innovation in bringing new and improved problem solutions (Schlæger et al., 2017). Government institutions have an ongoing need for innovation in the performance of work in the modern day. Technological advances are required to decrease the cost of services and improve access and produce a distinct and sustainable performance (Wiredu, 2012). (Schlæger et al., 2017)E-government innovation has been recognized as one of the essential tools for effectively assisting the public sector in achieving its objectives. The COVID-19 dilemma has compelled most nations to rely on ICT to meet their obligations, utilizing e-government apps and new innovative approaches for providing government services.

To accomplish innovation in e-government services, highly qualified employees are needed (Zheng et al., 2013). Agyabeng-Mensah et al. (2020) claim that it is crucial to equip governments and their human resources with the ability to deploy e-government innovation as a strategic alternative to address any future crisis or emergency. Nevertheless, despite the resounding success of innovative e-government applications, impediments and challenges impede the efficient adoption of e-government, such as employees' aversion to change (Meiyanti et al., 2018). According to Laumer et al.

(2014), employee resistance to change is one of the leading causes of e-innovation failures. In addition, they suggest that the success of e-government innovation does not depend just on developing new information technology solutions.

Organizational settings in the modern world tend to be highly dynamic. Ravichandran (2018) contends that implementing e-government innovations will make public sector organizations more adaptable and agile. Moreover, the introduction of e-government will give several value-creation technologies to facilitate the efficient execution of government activities (Cordella et al., 2017). Margetts et al. (2013) argue that e-government innovation can assist firms in establishing external interactions that improve their value generation capabilities. Clauss et al. (2021) argue that innovation and organizational adaptability are crucial to value development.

The analysis of the relevant literature demonstrates the necessity for empirical research on value creation in the context of e-government. It also reflects a lack of investigation into e-government innovation. Specifically, the literature found a dearth of empirical studies on the influence of employees' resistance to change on e-government innovation, organizational agility, and e-government value generation (Elgohary et al., 2020; Sacheva, 2009; Turner et al., 2022). It also indicated that previous studies had largely neglected to examine the contribution of e-government innovation to organizational agility and the influence of these dynamic capabilities on the production of e-government value (Deng et al., 2018; Twizeyimana et al., 2019). To make a significant contribution to the growing body of literature on e-government innovation and value creation, the purpose of this study is to provide a deeper understanding of the impact of employee resistance to change on e-government innovation, e-government value creation, and organizational agility. In addition, the study will examine the influence of e-government innovation on organizational agility and the production of e-government value. Finally, the relationship between organizational agility and e-government value creation will be investigated. The primary research topic addressed in this paper is:

Dose employees' resistance to change impact e-government innovation, e-government value creation, and organizational agility?

The rest of the study is structured as follows: Section 2 provides a theoretical framework. Section 3 shows the research model and hypotheses. Section 4 describes the research method. Section 5 demonstrates data analysis and results, followed by a discussion of the results and conclusion. The last section provides limitations and future works of the study.

2. LITERATURE REVIEW

Utilizing information and communication technologies (ICTs) such as the internet, websites, social media, and cloud computing, the electronic government provides e-services to the general public. Using ICTs can enhance all government activities and

services supplied to businesses and residents (Zhao et al., 2015). In recent decades, the rapid expansion of ICTs has helped improve public services by fostering novel electronic service delivery models (Deng et al., 2018). E-government has recently played a key role in promoting economic growth, boosting the community, and enhancing participants' lifestyles. Today, e-government portals and websites are the primary access point for stakeholders to acquire governmental services (Sorn-in et al., 2015). This innovation is advantageous for individuals and organizations since government agencies get cost reductions and higher efficiency while citizens receive enhanced services with less time investment (Weerakkody et al., 2011). In November of 2000, the e-government program was launched in Jordan. It seeks to improve public organizations' functioning and facilitate the delivery of government services to their constituents. According to the UNDESA (2020)

study, Jordan placed (117) in the world out of (193) nations, a decline of (19) positions from the previous ranking given in 2018, and rated (10) in the Arab world out of (20) Arab countries included in the report, a decline of two positions.

Scholars contend that the development of public administration processes is a crucial aspect that facilitates economic and social growth (Saner, 2018). Utilizing the advantages given by modern technology, governments have recently begun executing their tasks via electronic means. This revolution is a result of today's accelerating globalization, e-innovation, expanding knowledge force, and shifting social and demographic trends. Technology transformation is essential for enhancing the performance of government operations (Olugbara et al., 2018). However, organizational transformation does not always yield the anticipated results since individuals typically oppose change (Stouten et al., 2018). Employees' resistance to change is the habit of vehemently refusing, denying, and opposing the implementation of new ideas, according to Folger et al. (1999). Morrison et al. (1997) asserted that employees' reluctance to change is contingent on their logical beliefs regarding the suitability of the current condition. Employees desire a sense of safety and closeness. In addition, if the shift involves fresh technology, employees will fear that their skills will become obsolete. According to this, the resistance to change in government organizations is more difficult to manage than private firms.

The government sector contributes significantly to the growth of new economies. Implementing e-innovation in this industry can be crucial for attaining financial development and expansion, lowering expenses, and improving service quality (De Vries et al., 2016). Wiredu (2012) suggests that companies should implement e-innovation to become more robust and dynamic. As a result of the deployment of innovative approaches, the performance of government sector organizations has increased significantly in recent years (Almahamid, 2013). One of the most prevalent definitions of innovation is introducing a unique or significantly improved product (good or service), method, or new organizational strategy into business processes (Taylor,

2017). Wejnert (2002) contends that an organization's attitude toward change is crucial in determining the innovation's success.

Through implementing information and communication technology (ICT), public sector enterprises are progressively compelled to reinvent their operations and service delivery system (Rauch et al., 2017). Schlæger et al. (2017) describe e-government innovation as the process of developing innovative e-government solutions to address acknowledged governance-related concerns. Ultimately, the uniqueness of e-government approaches will enhance organizational agility and contribute to the production of e-government value (Kalvet, 2012). According to Zhao et al. (2015), governments have begun utilizing digital media to assure enhanced participation, transparency, and quality of services, eliminate corruption, and boost residents' satisfaction. E-government applications, such as collaboration, service models, and social network services, have been significantly altered by the emergence of Web 2.0. (Aichholzer et al., 2010).

According to Dalvi et al. (2013), organizational agility is the capacity of organizations to respond dynamically to and resolve unanticipated objections and risks in the business environment. According to Melián-Alzola et al., organizational agility is an organization's capacity to quickly adapt to outer and internal changes and meet the demands and expectations of its Farneti et al. (2019). Additionally, organizational agility requires responding to and controlling the continual and rapid changes that occur in complex work contexts (Darvishmotevali et al., 2020). E-innovation is essential for boosting organizational agility since it enables organizations to respond to changes promptly and efficiently (Esterhuizen et al., 2012). According to reports, increasing bottom-up communication within an organization reduces employees' reluctance to change and helps develop organizational agility (Harraf et al., 2015). Ravichandran (2018) analyzed two organizational agility drivers: IT competency and innovation capability. The results demonstrated that these two elements favorably influence organizational agility.

According to the literature (Bonina et al., 2008; Zhao et al., 2015), value creation is the ongoing growth of creative drivers in e-government initiatives. Enhancing e-government activities to receive valuable e-government services is a definition of e-government value creation (Wright et al., 2018). ICT has been a great tool for improving the value creation of e-government (Cordella et al., 2017). E-government systems create value by enhancing organizational efficiency, operational transparency, and citizen satisfaction (Hossain et al., 2011). According to the basic conception of public value, the ultimate goal of public services is to produce value for citizens (Moore, 1995). The literature demonstrates that numerous attempts have been made to evaluate the general utility of e-government services. Deng et al. (2018), for instance, recommend that the public value of e-government services must be established using a comprehensive framework that analyzes the supply of high-quality public services, the performance of public organizations, and the attainment of socially acceptable results.

In summary, the literature evaluation revealed that employee resistance to change had received insufficient attention in the study of e-government innovation, organizational agility, and e-government value generation. Given this literature gap, the present work's primary purpose is to construct a conceptual model to investigate these variables.

2.1 Theoretical Foundation and Hypotheses Formulation

Despite the benefits of ICTs and e-government services, there are issues regarding the smooth shift from old service delivery models to electronic systems. Prior research demonstrates that the most significant barrier to e-government adoption is organizational dynamics, specifically the need to overcome employee reluctance to change (Tsohou et al., 2013; Vonk et al., 2007). The topic of employee resistance to change has been extensively explored in management and information systems research. Previous research has developed various models (Alraja et al., 2016; Lapointe et al., 2005; Markus, 1983) to define better and comprehend employee resistance to change. Despite differences in concept, all relevant models depict resistance as a behavior with both implicit and logical aspects. According to Kim et al. (2009), researchers who investigate employee resistance to change frequently apply sociological theories such as the status quo bias theory, the human-systems interaction theory, and the people-oriented theory. Kim et al. (2009) suggest further that employee behavior and sources of resistance can be evaluated and analyzed regardless of the underlying theory adopted. Examples of potential causes of employee resistance to change include the perception that the new system may conflict with employee interests, the belief that an information system will reduce individual control and job autonomy, and the reluctance to invest additional time and effort to become familiar with the new system. According to research, employees typically resist adopting modern information systems for those mentioned above and other reasons (Lapointe et al., 2005).

Previous research (Alraja et al., 2016; Stefanovic et al., 2016) has indicated that TAM, Unified theory, and DOI variables increase public sector employee acceptance of e-government. Numerous studies from several sources have analyzed the distribution of e-government services utilizing these models. Multiple studies and government investigations have found that the availability of resources and organizational supports, such as more experienced legislatures and council-manager forms of government, are vital for encouraging the adoption of e-government initiatives (Hossain et al., 2011; Tolbert et al., 2008).

Employee resistance to change is a tendency that, depending on the extent and nature of resistance, can have several negative outcomes. At its worst, resistance might prevent the successful implementation of new information systems. Therefore, it can be argued that employees are an integral part of the system implementation procedure. Franklin et al. (2016) investigated employee resistance to change at the Saudi Telecommunications

Company. According to their results, the key cause for resistance to change in this instance was the employees' perspective and dedication to the status quo.

Regarding the electronic government, [Al-Khafaji et al. \(2012\)](#) asserted that inadequate training is the primary cause of employee opposition to e-government advances. In addition, they noted that employee resistance to change could fail e-government applications. [Elgohary et al. \(2020\)](#) examined the role of employees' resistance to change in adopting e-government in Egypt. The findings indicated that employees' fears of losing control and increased workload significantly impact the functioning of e-government in Egypt. [Melián-Alzola et al. \(2020\)](#) investigated the role of human practices in the agility of organizations. According to the findings, human practices substantially impact organization agility. [Yeganegi et al. \(2012\)](#) investigated the impact of ICT innovation on organizations' skills. The results demonstrated that ICT influences all areas of organizational agility. [Cegarra-Navarro et al. \(2016\)](#) created a conceptual model to examine the connection between organization agility and organization performance. The results indicated that organizational agility mediates the relationship between e-services performance and organizational agility.

Implementing e-government innovation apps is difficult and presents numerous obstacles ([Samsor, 2021](#)). These obstacles can be embarrassing while attempting to enhance e-government innovation, value generation, and organizational agility. Therefore, businesses should carefully manage their transition to e-government systems by utilizing a systematic approach to transition individuals, teams, and standards from their current state to their desired future state ([Sacheva, 2009](#)). Change management's objective is not only to issue a new plan but also to create favorable conditions for the plan's implementation without provoking resistance from personnel ([Cordella et al., 2015](#)).

According to prior research (Innovation, agility, and value creation), employees' resistance to change is a determinant of the organization's dynamic capacities. According to the literature analysis and applying (status quo bias, DOI, and public value) theories, [Figure 1](#) depicts the constructed conceptual model. The hypothesis of status quo prejudice expresses emotional bias, in which employees favor the current condition of affairs. Any deviation from the existing baseline is perceived as a loss, according to [Samuelson et al. \(1988\)](#). Diffusion on innovation (DOI) is a theory that describes how, why, and at what rate unique ideas and technologies disseminate among individuals and organizations ([Rogers et al., 2014](#)). [Moore \(1995\)](#) public value theory represents an organization's contribution to the community. According to the research model depicted in [Figure 1](#), employees' resistance to change can directly affect e-government innovation, organizational agility, and the development of e-government value. In addition, the research model indicates that e-government innovation can directly affect organizational agility and the production of e-government value. It concludes that organizational agility directly affects the generation of e-government values.

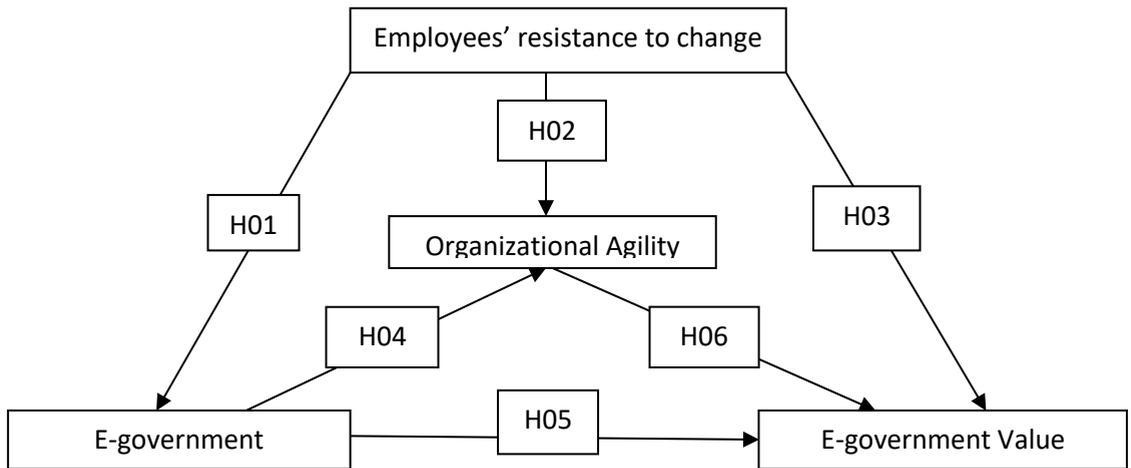


Figure 1: The Model of Research

In the following, we will introduce the hypotheses of the study model and explain each construct.

2.2 Employee Resistance to Change and E-Government Innovation

Continuous advancements in e-government applications provide public sector organizations with unique entrepreneurial prospects. Several studies (Arduini et al., 2010; Rashed Shtait Hamad et al., 2018) have demonstrated the significance of ICT advancements in enhancing e-government applications. Chung (2015) contends that e-government innovation applications are necessary to increase the operational efficiency of government entities. Innovativeness is a component of entrepreneurship that represents a company's capacity to embrace fresh operational strategies (Hanif et al., 2018). Additionally, it means the extent to which a company offers unique products, procedures, or technologies (Miller et al., 1982). Only businesses with unique internal capabilities (such as product innovation, process innovation, and learning) may achieve higher performance, according to the Resource-Based View (RBV) theory (Mitrega et al., 2017)

Mathews et al. (2016) contend that organizational innovation can involve various modifications that influence how workers work, communicate, and are managed. Nasim et al. (2010) believe e-government to be an organizational shift rather than a technology one and therefore claim that transitioning from a familiar organizational structure to an innovative one may result in resistance to change among employees. Some employees, particularly senior employees, regard change as an impending danger (Tsohou et al., 2013). Ebbers et al. (2007) assert that the forces that oppose e-government innovations may outweigh those that promote them. Previous research, such as that of Samsor (2021), indicates that resistance to change is a major obstacle that might harm e-

government activities. According to previous research (Abdullah et al., 2006; Doherty et al., 2005), employees in the public sector reject technological transformation and the use of contemporary technology out of fear of losing their jobs. Individual qualities, behavior, and perception have a significant impact on information technology innovation, according to Andalib et al. (2018). In addition, they suggest that routine-seeking mentality, emotional reactivity, cognitive rigidity, and a focus on the short term are significant variables that cause employees to resist change. According to Nakhoda et al. (2017), fear of losing control and power, fear of overload, fear of losing their current job, fear of increased workload, fear of the high cost of change, and a lack of appropriate reward policies are significant factors that cause employees to resist adopting new technologies.

Based on the preceding literature review, the following first hypothesis is proposed:

H1: Employee resistance to change significantly negatively impacts e-government innovation.

2.3 Employee Resistance to Change and Organizational Agility

Organizations in the public sector are gradually transitioning toward digital transformation. This shift can be difficult to manage with conventional tactics. One change management proposal is applying agile methodologies (Ylinen, 2021). Organizational agility necessitates the application of new tools and resources to help restructure the organization in response to innovative situations, unpredictability, and recurrent change (Qin et al., 2010). According to Harraf et al. (2015), public sector organizations can increase their adaptability and responsiveness by employing two techniques: speed and responsiveness. Previous research (Koh et al., 2006; Rana et al., 2013) has emphasized the significance of ICT in enhancing the responsiveness, liability, and internal efficiency of public sector organizations. Greve et al. (2020) and other studies suggest that adaptive governance methods can aid the public sector in adapting to the contemporary operational setting. Attar et al. (2020) assert that the public sector organizations' exposure to persistently unprecedented developments underscores the significance of implementing agility procedures. According to previous research, such as Ewrierhurma et al. (2020), people with an adaptable attitude can respond positively to changes, take advantage of new chances, and adapt well to uncertain situations. Ewrierhurma et al. (2020) both imply a considerable correlation between people's competencies and organizational agility. Melián-Alzola et al. (2020) assert that human behavior plays a significant influence in fostering organizational agility. According to Saha et al. (2017), learning and human resource management practices help enhance organizational agility. Hawker et al. (2011) contends that some individuals in firms may resist organizational agility practices. These are primarily employees who refuse to adopt current developments, regarding innovative technologies as a threat to their careers, and fear an increase in their workload and loss of authority. Harraf et al.

(2015) contend that the extent of employees' resistance to change is a crucial factor in building agile organizational components.

Based on the preceding literature study, the following second hypothesis is proposed:

H2: Employee resistance to change has a significant negative impact on organizational agility.

2.4 Employee Resistance to Change and E-Government Value Creation

Previous research (Farneti et al., 2019; Wright et al., 2018) has demonstrated that the use of ICT by firms can aid in creating value and developing future plans. Azam (2015) contends that ICT adoption plays an important role in the production of corporate value. By using e-government applications and ICT, public sector organizations are currently aiming to provide electronic services with high efficiency and attain citizen satisfaction (Zhao et al., 2015). Therefore, a continual evaluation of ICT implementations is necessary to ensure the development of e-government applications and to add value to the given electronic services. The rapid rise of e-government applications, according to Alcaide-Muñoz et al. (2015), necessitates the continual evaluation of the importance of e-government implementation.

One of the primary obstacles to generating public value through e-government technologies is the absence of qualified human resources (AlKalbani et al., 2015). Elgohary et al. (2020) suggest that employees' aversion to change (because of fear of losing authority, an increase in workload, job insecurity, and lack of IT qualification) has impeded the success of e-government efforts. According to Alameri (2013), uncertainty regarding job security and dread of the future can raise employee resistance to technological innovation. This opposition will diminish the value creation brought about by the change. According to Zhao et al. (2015), certain psychological variables, such as the fear of being unappreciated, making mistakes, and having a heavy workload, can hinder employees' acceptance of the technological change. These variables will result in the sense of employment insecurity and the rise of negative thoughts, which might have a detrimental impact on the value of contemporary technology.

Based on the preceding literature study, the following third hypothesis is proposed:

H3: Employee resistance to change significantly negatively impacts e-government value creation.

2.5 E-Government Innovation and Organizational Agility

Today, agility is one of the most important characteristics that define an organization's survival and success in a constantly shifting environment (Mahmoudi, 2015). Rapidity, reactivity, expertise, and adaptability are the defining features of agile businesses (Worely & Lawler, 2010). Public sector organizations work under severe constraints and are accountable to many stakeholders. Consequently, they must be more adaptable than

private sector enterprises (Dahmardeh & Banihashemi, 2010). Organizations in the public sector must coordinate the growth of their organizational agility and IT skills. Organizational agility is the capacity of an organization to respond rapidly and effectively to environmental changes (Fremdt et al., 2013). Previous research (Ilmudeen, 2022; Ravichandran, 2018) indicates that an organization's ICT capabilities significantly affect its ability to attain organizational agility. Consequently, public administrations have begun to increase their IT capabilities and implement cutting-edge technology to support their services (Malsbender et al., 2013).

Agility governance incorporates e-government and focuses on continuously moving in a better direction with speed and intelligence (Al-Romeedy, 2019). Therefore, firms are continually looking for ways to be more adaptable by successfully responding to environmental challenges and opportunities. Therefore, firms rely on IT innovation to remain flexible (Lowry and Wilson, 2016). The emergence of e-government applications has had a good impact on organizational agility. Kaya Mahmoudi et al. (2015) contend that e-government activities and managerial skills are intrinsically linked. Yeganegi and Azar (2012) assert that ICT innovation can facilitate all characteristics of organizational agility, including speed, responsiveness, competency, and adaptability. Irfan et al. (2019) suggest that IT capabilities enhance an organization's sensitivity to and responsiveness to abrupt external changes.

Based on the literature mentioned above study, the following fourth hypothesis is proposed:

H4: E-government innovation has a significant positive impact on organizational agility.

2.6 E-Government Innovation and E-Government Value Creation

With the advent of the ICT revolution and unstable business environments, there is much interest in investigating how a public sector organization that utilizes information technology skills might increase its agility (Zheng et al., 2013). SA, Rocha, and Cota (2016) confirm that establishing innovative e-government public services has played a crucial role in improving government operations and boosting the government's current communications with its stakeholders. Previous research (Carter et al., 2016; Nguyen, 2016) has demonstrated that adopting e-government applications provides numerous advantages for citizens, including ease, efficiency, lower service prices, democracy, participation, and enhanced transparency. Emergent technologies such as Big Data, the internet, intelligent agents, neural networks, and artificially intelligent algorithms have been accorded public importance (Andrews, 2019). For e-government services to be successful, governments must be able to provide credible and high-quality public service. Availability of specific organizational expertise and public confidence are also crucial (Kaufmann et al., 2011). Alshammari et al. (2014) assert that innovation enhances value for stakeholders by using fresh solutions that satisfy new needs. Public

organizations employ ICT and electronic government apps to suit the needs of their stakeholders and as a source of value creation for government services (Zhao et al., 2015). These applications should deliver value to stakeholders by guaranteeing high-quality services, efficient operations, and the achievement of socially acceptable results (Deng et al., 2018). Previous research (Margetts & Dunleavy, 2013; Clauss et al., 2021) indicates that e-government innovation strongly correlates with the development of government value.

Based on the preceding literature study, the following fifth hypothesis is proposed:

H5: E-government innovation has a significant positive impact on e-government value creation.

2.7 Organizational Agility and E-Government Value Creation

Digital transformation in globalized communities possesses a crucial capacity to enhance human potential by creating digital communities, thereby ensuring the creation of public value by citizens (Ma et al., 2020). For this reason, governments and decision-makers strive to incorporate novel technologies such as big data and the Internet of Things (IoT) into public sector services to increase productivity (Wright and Schultz, 2018). Mergel et al. (2013) claims that agile governments assure the adaptability of their operations by utilizing an elegant strategy to respond to environmental changes. This approach would strengthen the government's collaboration with its stakeholders. However, technological advances consistently alter the conditions for businesses. Even though these developments can create new problems, they also provide innovative opportunities to create value by surpassing conventional approaches (Chesbrough, 2010). Recently, governments have begun providing public services online to enhance their effectiveness and decrease administrative and financial costs (Tsohou et al., 2013).

Clauss et al. (2021) claim that organizational agility substantially correlates with value creation. Previous research (Zheng et al., 2013; Tallon & Pinsonneault, 2011) has demonstrated that organizational agility enables public companies to respond rapidly and effectively to changing circumstances, enhances service quality, and capitalizes on potential possibilities. According to Abdulkareem et al. (2022), e-governments can generate public value through providing public services, achieving socially exemplary results, and fostering trust. According to Cegarra-Navarro et al. (2016), organizational agility influences the service delivery performance of an organization and acts as a facilitator for organization-related matters.

Based on the preceding literature study, the following sixth hypothesis is proposed:

H6: Organizational agility has a significant positive impact on e-government value creation.

3. RESEARCH METHOD

3.1 Research Design

Using a quantitative approach and a survey, this empirical study determined the impact of employee resistance to change on e-government innovation, e-government value creation, and organizational agility. The population was comprised of all government employees in Jordan. The measurement and Structural model of the study were evaluated using Smart PLS version 2.0 and Partial Least Squares Structural Equation Modeling (PLS-SEM).

3.2 Measurement and Instrument Development

A paper-based questionnaire was developed to analyze the research model constructs. The measurement items were developed based on information from related literature, as shown in [Table \(1\)](#).

Table 1: Sources of Constructs Measurement

Construct	Code	No. of Items	References
Employee resistance to change	ER	8	Elgohary and Abdelazyz, 2020; Nakhoda and Tajik, 2017; Andalib and Hashim (2018)
Organization agility	OA	7	Darvishmotevalia et al., 2020; Al-Romeedy, 2019; Sahid et al., 2020.
E-government innovation	EGI	7	Al-Omoushet et al., 2021; Najafi-Tavani et al., 2018; Asgarian 2012; Ogola and Nyang'au, 2021.
E-government value creation	EGV	8	Twizeyimana and Anderssona, 2014; Deng and Karunasena, 2018; Hossain, et al., 2011; Scott et al., 2016.

Once the survey questionnaire was created, its validity was evaluated. Five specialists with appropriate knowledge and experience in e-government assessed and examined the questionnaire's measuring items, and their comments and suggestions were considered. In addition, a pilot study with 30 participants was undertaken to boost the questionnaire's reliability and enhance the quality and efficacy of the main research ([Rauch et al., 2017](#)). To further validate the study, the questionnaire was modified based on the input collected from these respondents. The questionnaire was translated into Arabic because the study was conducted in an Arabian country (Jordan). For the translation process, professional translators utilized a backward translation technique provided by [Brislin \(1976\)](#). A five-point Likert scale (1 highly disagree, 2 disagree, 3 neutral, 4 agree, and 5 extremely agree) was utilized for scoring participant replies. As stated in [Table \(2\)](#), the questionnaire was divided into four sections containing 30 questions (2).

Table 2: Measurement Items

Construct	Code	Measurement Items
Employees' resistance to change (ER)	ER1	I'm anxious about how things will be after adopting e-government systems.
	ER2	The implementation of an e-government application in my organization annoys me.
	ER3	I believe that the change to e-government was unnecessary.
	ER4	I prefer to work traditionally rather than try a new e-government system application.
	ER5	The implementation of the e-government process has increased employees' tension.
	ER6	I believe that adopting e-government will cause me to lose control and power on the job.
	ER7	I think adopting an e-government application will cause employees to lose their expertise.
	ER8	I believe that employees need extra time and training to get acquainted with the new e-government system.
Organizational agility (OA)	OA1	The e-government system has empowered the organization to conduct its activities more competently.
	OA2	The e-government system has allowed the organization more flexibility to accomplish its activities.
	OA3	Using the e-government system, employees can retrieve the data that they require quickly and easily.
	OA4	Using the e-government system, the organization can respond to the expanding needs of citizens in a better manner.
	OA5	E-government applications aid the organization in the planning process.
	OA6	E-government applications improve the organization's capability to cope with unexpected changes.
	OA7	Following the implementation of the e-government system, our organization is now solving client complaints rapidly.
E-government innovation (Yeganegi et al.)	EGI1	Our organization invests heavily in novel e-government applications.
	EGI2	Our organization emphasizes offering unique e-government processes and services.
	EGI3	Our organization welcomes any innovative ideas concerning implementing the e-government system.
	EGI4	Our organization puts a heavy focus on R&D and innovations.
	EGI5	Our organization has restored obsolete services by using e-government applications.
	EGI6	Our organization has increased the scope of its services by providing them electronically.
	EGI7	Our organization has worthy expertise in implementing new and innovative technological services.
E-government value creation (EGV)	EGV1	Adopting e-government applications has increased the organization's control over public services.
	EGV2	Using e-government services has reduced bottlenecks in the provision of services to citizens.
	EGV3	Maintaining accurate and permanent information is easy when using the e-government system.
	EGV4	Collaboration, cooperation, and more reliable communication are achieved when using the e-government system.
	EGV5	E-government initiatives have helped increase citizens' participation in decision-making.
	EGV6	E-government applications have improved the transparency of government sector procedures.
	EGV7	The E-government system has helped improve the organization's integrity, accountability, and responsibility.
	EGV8	The E-government system has increased citizens' confidence in the government sector.

3.3 Sampling and Questionnaire Administration

This study attempts to determine the effect of employee resistance to change on e-government innovation, organizational agility, and the generation of e-government value. The scope of the research includes all government employees in Jordan. Social Security Corporation, Greater Amman Municipality, Ministry of Interior, Civil Status and Passports Department, Ministry of Industry and Trade, Ministry of Tourism and Antiquities) The six most advanced Jordanian government organizations that have been active in adopting and utilizing e-government applications were selected, as reported in a meeting held by the Ministry of Digital Economy and Entrepreneurship and the Ministry of Information Technology.

Following the goal of this analysis, the current study employs purposive sampling by focusing on government personnel who utilize e-government apps. Each respondent was informed of the research objectives before receiving one of the 640 questionnaires delivered purposefully to the administration employees of these organizations. There were 437 valid responses received. According to [Hair \(2009\)](#), the minimum sample size for a structural model analysis is five responses per measurement item. This study covers the measurement of 30 items. Hence a minimum of 150 valid replies are required. The number of answers included for this research (437) exceeded the minimal threshold of 150 responses required by law.

3.4 Data Analysis and Results

This study analyzed data using Partial Least Squares Structural Equation Modeling and Smart PLS version 2.0. (PLS-SEM). PLS is a powerful analytical tool to evaluate the effectiveness of new and causal models with multiple constructs. PLS-SEM enables the contemporaneous assessment of several connected hypotheses by examining the correlations between many model variables ([Hair, 2009](#)). According to [Ang et al. \(2015\)](#), PLS-SEM is an effective method for analyzing complicated research models with multidimensional characteristics. PLS-SEM would be ideal for our needs, given that our study investigates the impact of employees' resistance to change on three distinct phenomena: e-government innovation, organizational agility, and e-government value creation. The PLS path model employs two different forms of analysis. The inner model evaluates the constructions' dependability and validity, while the structural model investigates the links between model constructs.

3.5 Measurement (Inner) Model Results

The measurement model measured the internal consistency, convergence, and discriminant validity of the studied constructs. Composite Reliability and Cronbach's alpha were used to examine the internal consistency reliability ([Hair, 2009](#)). [Table \(3\)](#) shows that all constructs had satisfactory internal consistency reliability values greater than the recommended threshold of 0.70. Convergent validity was assessed using factor loadings, composite reliability ([Stouten et al.](#)), and average variance (AVE). [Table 3](#)

shows that the composite reliability and average variance satisfy the standard threshold ($CA > 0.7$ and $AVE > 0.5$) (Hair, 2009). Factor loading was applied to enhance item measurement. Items that had a value lesser than 0.50 were eliminated from the analysis. In this manner, two items were excluded from the employees' resistance to change construct (ER5, ER7), one from the organizational agility construct (OA4), one from the e-government innovation construct (EGI7), and two from the e-government value creation construct (EGV2, EGV8).

Table 3: Validity and Reliability

Construct	Items	Factor loading	Cronbach's alpha	rho_A	CR	AVE
Employee resistance to change	ER1	0.843	0.910	0.923	0.932	0.698
	ER2	0.877				
	ER3	0.669				
	ER4	0.737				
	ER6	0.904				
	ER8	0.948				
Organization agility	OA1	0.675	0.831	0.859	0.873	0.539
	OA2	0.541				
	OA3	0.750				
	OA5	0.777				
	OA6	0.828				
	OA7	0.796				
E-government innovation	EGI1	0.798	0.825	0.825	0.873	0.537
	EGI2	0.579				
	EGI3	0.761				
	EGI4	0.717				
	EGI5	0.777				
	EGI6	0.745				
E-government value creation	EGV1	0.780	0.838	0.852	0.882	0.560
	EGV3	0.766				
	EGV4	0.514				
	EGV5	0.826				
	EGV6	0.732				
	EGV7	0.827				

Cross-loading comparisons were conducted between constructs to measure the discriminant validity (Fornell & Larcker, 1981). Table (4) shows that the square root of the AVE of each construct is greater than the correlations with the other constructs, designating sufficient discriminant validity.

Table 4: Discriminant Validity

No	Constructs	1	2	3	4
1	Employee resistance to change	0.835			
2	Organization agility	-0.357	0.734		
3	E-government innovation	-0.349	0.468	0.733	
4	E-government value creation	-0.310	0.617	0.623	0.749

To Strengthen the discriminate validity, another technique has been utilized, which was proposed by [Henseler et al. \(2015\)](#) through the Heterotrait-Monotrait Ratio(HTMT). A value of less than 0.85 indicates acceptable discriminant validity. The results are shown in [Table \(5\)](#).

Table 5: Heterotrait-Monotrait Ratio (HTMT)

No	Constructs	1	2	3	4
1	Employee resistance to change				
2	Organization agility	0.397			
3	E-government innovation	0.387	0.522		
4	E-government value creation	0.359	0.646	0.841	

The results in [Table \(6\)](#) show the hat HTMT criterion is satisfied, ensuring that the Discriminant Validity is established.

3.6 Assessing the Structural Model and Testing the Research Hypotheses

[Figure \(2\)](#) shows the results of the structural modeling analysis, indicating causal relationships between the constructs of the study model. The path coefficient (β) and t-value for each relationship were determined to examine the study hypotheses. [Hair \(2009\)](#) explain that path coefficients higher than 0.1 with t-values higher than 1.96 are significant at 0.05.

The findings of the examination of the research hypotheses are presented in [Table 6](#). The results demonstrate that employee resistance to change directly and substantially affects organizational agility and e-government innovation. The results also reveal that organizational agility now and substantially affects e-government innovation and the generation of e-government value. Lastly, the results demonstrate that e-government innovation directly affects the production of e-government value. However, the data also indicate that employees' reluctance to change has no direct effect on the value creation of e-government.

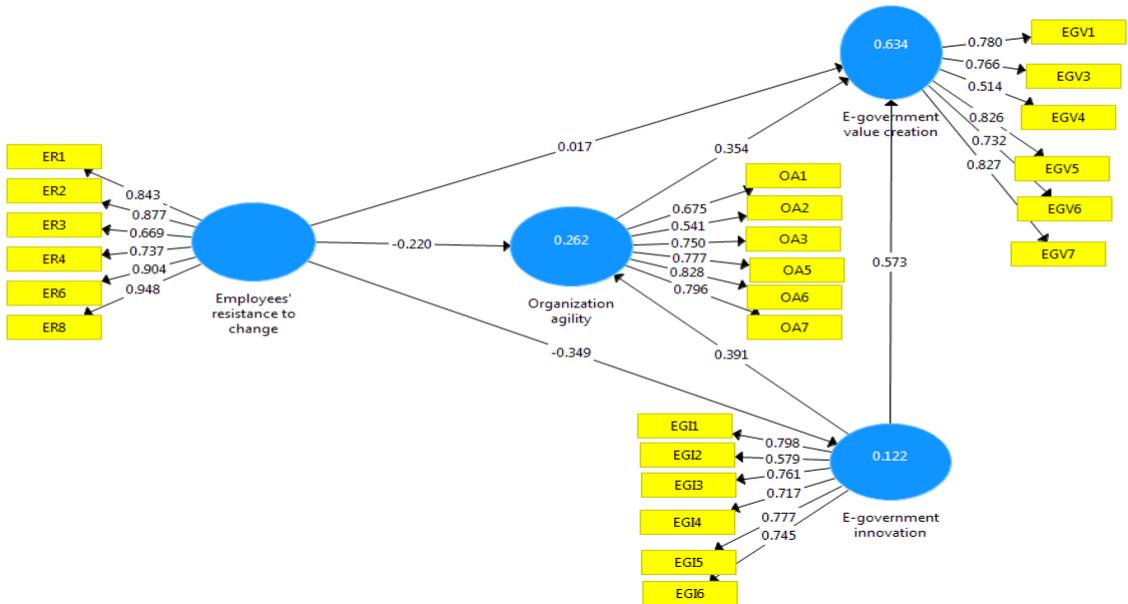


Figure 2: Path Coefficient Analysis

Table 6: Results of Testing the Research Hypotheses

H	β	T value	Sig.	The results
1	-0.349	3.704	0.000	Supported
2	-0.222	2.201	0.028	Supported
3	0.017	0.229	0.819	Not Supported
4	0.391	4.978	0.000	Supported
5	0.573	8.589	0.000	Supported
6	0.354	4.351	0.000	Supported

Assessment of the structural model includes a coefficient of determination(R square). The value of R square is declared in table 7.

Table 7: R-Square

No	Constructs	R-Square
1	Organization agility	0.262
2	E-government innovation	0.122
3	E-government value creation	0.634

The blindfolding approach tested predictive relevance (Q square). Tenenhaus (1999) indicated that values of the Q square should be greater than zero to confirm predictive relevance. Table 8 shows that all Q square values are higher than 0.

Table 8: Q-Square

No	Constructs	Q ² (=1-SSE/SSO)
1	Organization agility	0.113
2	E-government innovation	0.057
3	E-government value creation	0.316

Moreover, the size of the effect (F-square) was calculated depending on (Cohen, 1988) creation (0.02 small, 0.15 medium, or 0.35 big). The results are shown in table (9).

Table 8: Q-Square

No	Constructs	EP	Effect Size
1	Employees' resistance to change - e-government innovation (H1).	0.139	Small
2	Employees' resistance to change - e-government innovation (H2).	0.058	Small
3	E-government innovation - organizational agility (H4).	0.182	Medium
4	E-government innovation - e-government value creation (H5).	0.667	Big
5	Organizational agility - e-government value creation (H6).	0.253	Medium

To ensure there are no nonlinear relationships between variables, a robustness test was executed. The results show that there is no quadratic effect or statically significant, which means that the relationships between variables are linear, as shown in table (11).

Path	Coefficient	t-statistics	P value
Quadratic effect of Employee resistance on e-government innovation.	0.204	1.493	0.136
Quadratic effect of Employee resistance on organization agility	0.145	1.016	0.310
Quadratic effect of Employee resistance on e-government value creation	-0.002	0.033	0.974
Quadratic effect of E-government innovation on organizational agility.	-0.061	0.849	0.396
Quadratic effect of E-government innovation on e-government value creation.	0.075	1.573	0.116
Quadratic effect of organizational agility on e-government value creation.	-0.120	2.444	0.015

4. DISCUSSION

Recently, government agencies have begun embracing e-government technologies to stay up with technological advancements. They are undertaking projects utilizing ICT technologies, the internet, and smart devices to develop excellent governance and forge new alliances with society. This innovation in e-government has resulted in considerable changes to the structure of the public sector. However, such adjustments can result in employee resistance. The aversion of employees to change is one of the most fundamental obstacles impeding the deployment of innovations. Employees tend to oppose technological advances because they fear that ICT applications will cause them to lose their jobs. A literature study indicated that empirical research on employees' resistance to change in e-government innovation, organizational agility, and e-government value creation is scarce. Therefore, this study was conducted to fill in the gaps left by previous research in this setting.

Employee resistance to change has a substantial impact on e-government innovation, according to the study's findings. According to prior research (Elgohary et al., 2020; Samsor, 2021), employees' aversion to change is a key impediment to implementing innovative e-government applications. These findings are also consistent with those of Meiyantia et al. (2018), who indicated that public sector employees resist embracing new technologies because of fear of job loss. In addition, our findings were consistent with those of earlier research (e.g., Andalib and Hashim, 2018; Nakhod & Tajik, 2017), which found that public sector employees' individual qualities, actions, and views increase their resistance to technological change. Saboohi and Sushil (2010) note that personnel with greater resistance are more averse to commencing technological growth and prefer to stick to well-established practices, notwithstanding the benefits of change.

Our research indicates that employee resistance to change has a major impact on organizational agility. These findings are consistent with those of prior research (Harraf et al., 2015; Ilmudeen, 2022), which state that employee resistance to change is a significant factor that impacts organizational agility. Our findings are consistent with those of past research (Ewvirhurhoma and OGA, 2020; Saha et al., 2017), which contends that staff competencies and human behaviors are significant determinants of organizational agility success. Ewvirhurhoma and OGA, (2020) argue that only adaptable personnel can embrace change and utilize new technology. Stevens and Loudon (2002) argue that firms should include their staff in the technological transformation process to reduce opposition and uncertainty.

The results of our study do not indicate that employees' reluctance to change substantially affects the value generation of e-government. Our findings also contradict those of AlKalbani et al. (2015), who established the presence of a correlation between employee resistance and the value generation of e-government. Our findings also contradict the opinion of Singh (2015), who contends that employees' aversion to

change, which derives from a fear of losing control, a lack of IT skills, and a heavy workload, hinders the acceptance of ICT adoption, hence affecting the value generation of a business. However, based on the findings of our study, we conclude that employees' resistance to change has no direct effect on the development of e-government value but does exert an indirect effect by influencing innovation in e-government applications, which will result in the realization of the intended value.

Our research indicates that e-government innovation has a substantial impact on organizational agility. These findings are consistent with the results of prior research (Kaya et al., 2020; Mahmoudi, 2015), which demonstrate that adopting innovative e-government apps can increase organizational agility. The findings are also consistent with those of past research (Ilmudeen, 2022; Ravichandran, 2018), which states that ICT tools play a crucial role in facilitating the attainment of organizational agility. In agreement with these claims, Roblek (2020) asserts that using social networks as communication tools enables governments to engage with their stakeholders more effectively.

Our study's findings support the concept that e-government innovation influences the production of e-government value. These findings are consistent with those of other studies (Margetts & Dunleavy, 2013; Clauss et al., 2021), which conclude that e-government innovation substantially correlates with the production of government value. The findings are also congruent with those of Hossain et al. (2011). They assert that the implementation of innovative e-government systems can have a favorable impact on government efficiency, transparency, and citizen satisfaction. In agreement with this thesis, Zhao et al. (2015) say that using ICT capabilities in government applications can facilitate organizational value creation.

The study's findings indicate that organizational agility is crucial for attaining e-government value generation. These results are consistent with prior studies (Clauss et al., 2021; Zheng et al., 2013), which contend that organizational agility is essential for producing e-government value. It also agrees with (Al-Omouh et al., 2021), which demonstrated that using big data analytics in critical government procedures can enable the creation of value-added services.

4.1 Study Implications

This study's results contribute to improving e-government systems' implementation from both theoretical and practical perspectives. Theoretically, our work contributes significantly to the growing body of literature on e-government by providing a profound understanding of the impact of employees' resistance to change on e-government innovation and organizational agility. In addition, it emphasizes the importance of e-government innovation in achieving organizational agility and producing e-government value. In addition, the study results provide a greater understanding of the connection between organizational agility and the production of value in e-government.

The report provides management leaders with a practical grasp of how e-government innovation should be implemented. It gives a good understanding of why employees resist change, which supervisors and managers may utilize to manage e-government innovation better. Our findings suggest that e-government policymakers should involve important personnel in driving technological innovation. Additionally, meetings and conversations should be held with employees before implementing changes to alleviate their apprehension of novel e-government programs. In addition, our findings demonstrate that employee cooperation is essential to the success of e-government innovation. Before introducing innovative e-government systems, managers must acquire the trust of their workforce.

5. CONCLUSION

The revolution of technology advancements such as big data analytics, smartphones, artificial intelligence, and virtual reality has assisted governments in enhancing their work, communication, and stakeholder service. Today's digital environment has compelled government agencies to engage with technological platforms and adopt e-government innovations to remain close to their constituents and provide improved public services. However, they may encounter resistance from their staff. This study aimed to determine how employee resistance to change affects e-government innovation, organizational agility, and the generation of e-government value.

The significance of employees' reluctance to change for e-government innovation is examined in this study. The findings indicate that the implementation of an e-government system can cause employees to acquire uneasiness and anger about the future. They would rather stick with the status quo than experiment with a new system. They fear implementing innovative e-government technology will result in losing their employment and authority. In addition, they are concerned that their workload will grow and they will require extensive training to adjust to the new system.

In contrast, this study empirically demonstrates the effect of employee resistance to change on developing organizational agility. The findings reveal that employees' aversion to change can hinder an organization's efforts to enhance its performance and agility. In addition, the data indicate that employees' reluctance to change has little impact on the value creation of e-government. We acknowledge that additional empirical research is necessary to substantiate this conclusion.

This study demonstrates that e-government innovation may be utilized as a strategic instrument to improve organizational agility and e-government value creation. Using e-government software, organizations endeavor to revive defunct services and provide distinctive processes and services. The study reveals that e-government innovation boosts organizational agility by facilitating greater contact with stakeholders and enhancing flexibility and competency. In addition, the results demonstrate that e-government innovation has a significant role in promoting government services by

enhancing control, transparency, accountability, people's confidence, and participation in decision-making.

This study also demonstrates that organizational agility has a significant role in boosting the value creation of e-government. This conclusion expanded the prevalent knowledge of the role of organizational agility in boosting the value creation of e-government. The findings suggested that an organization's capacity to respond to the rising requirements of citizens and to work quickly and flexibly to deliver enhanced quality of services, integrity, citizens' confidence and collaborations can promote the value creation of e-government.

The study's findings imply that government agencies must invest more in various new and unique electronic tools to enhance their adaptability, service quality, transparency, citizens' trust, confidence, and engagement. Additionally, government organizations should strengthen their corporate culture to boost employee acceptance of the innovative e-government system and eliminate resistance. Additionally, they must provide enough training programs to increase employee acceptance of e-government innovations and narrow the digital gap. To manage employee resistance to change, they must apply acceptable communication, motivation, sharing, and discussion approaches. In addition, organizations can instruct their managers to respond to all employee comments and questions regarding the innovative e-government program. In addition, government organizations must prepare individuals who can swiftly and successfully adapt to change.

6. LIMITATIONS AND FUTURE WORKS OF THE STUDY

This study had some shortcomings that indicate the need for further investigation. This study evaluated the relationship between employees' reluctance to change and e-government innovation, organizational agility, and e-government value generation. Still, it did not investigate additional barriers that government organizations embracing e-government innovation may face. Future research can focus on discovering techniques to reduce employees' reluctance to change while implementing an innovative e-government system. Furthermore, comparison studies could be undertaken to assess the variations in resistance to change between public and private personnel. In addition to including survey participant characteristics (gender, age, education, and position) to deepen the understanding of the data, we include the following. Another drawback of our study is that the sample was comprised solely of government agencies in Jordan. Consequently, the results cannot be generalized to entire nations. Future research can examine the occurrence in different nations to evaluate whether significant differences exist.

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