

Exploring on Acceptance of E-Participation in The Malaysian Public Sector: A Review Paper

Mohamad Nur Salam Man^{1} and Halimah Abdul Manaf¹*

¹Public Management Department, School of Government, UUM College of Law, Government, and International Studies (COLGIS), Universiti Utara Malaysia, 06010 Sintok, Kedah, Malaysia

Abstract. Since the federal, state, and local levels of government in Malaysia have all initiated the e-participation project as an integration of the national e-government initiative and combined communication-based applications consisting of government-to-citizen (G2C) orientation, assessment studies have discovered that the delivery of this project carries multiple issues. These include minimal digital knowledge, a lack of awareness, the requirement for more government support for the project, and other factors. This has resulted in certain entities not making the most of e-participation tools. Thus, this review paper intends to examine some relevant acceptance factors of the Malaysian government's e-participation programme, which has received significant investment. This study methodology used the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Technology Readiness Index (TRI) to build the research model for this study by exploring the relevant books, journals, online materials, and study reports linked to the e-participation acceptance in Malaysian public sector. The UTAUT and TRI factors may influence the likelihood of its adoption by all Malaysian governments and citizens, which will encourage them to support the use of e-participation in the public sector in Malaysia. The proposed model will evaluate the individual acceptance of e-participation in the Malaysian public sector. This study is anticipated to provide several guidance to relevant parties, particularly the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU), which is one of the most prominent government agencies in Malaysia responsible for modernising and reforming the public sector through the digitalisation process, and other related government agencies in Malaysia. For future studies, additional empirical qualitative and quantitative methodologies are required to validate the findings of this study.

1 Introduction

For years, numerous worldwide forums have emphasized the value of public participation for a more comprehensive public-sector environmental decision-making process. For example, the United Nations Conference on Environment and Development (UNCED), frequently

* Corresponding author: mohamad_nur_salam@gsgsg.uum.edu.my

called the "Earth Summit," was held in Rio de Janeiro, Brazil, from June 3-14, 1992. The conference has been acknowledged for bringing attention to the widely recognised public participation program from a global perspective since 1992. The development of Agenda 21, or LA21 as it is commonly known, is one of the most significant results of the UNCED. The goal of LA21, a community-led collaboration process that is entirely voluntary, is to produce locally-based policies and initiatives that contribute to the goal of sustainable development. Educating the public, empowering locals, encouraging involvement from all sectors of society, and forging new alliances are all part of LA21's scope.

The LA21 agenda emphasizes the significance of public participation, such as in Principle 10, which underscores the notion that addressing "environmental issues are best handled with the participation of all concerned citizens at the relevant level." Additionally, Principle 22 underscores the importance of "states should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development." Since these ideas were first formed, there has arisen an interest in the notion of public participation, which highlights the vital role that local communities play within civil society in advancing the well-being of countries via participating in government. As a result, the implementation of the Local Agenda 21 (LA21) was officially carried out by the Malaysian government in 1999. The LA21 is a framework that emphasizes the participation of various stakeholders and communities in decision-making processes in Malaysia [1]. The LA21 initiative aims to foster collaboration among various levels of government in Malaysia and the public to effectively plan and sustain a healthy environment, aligning with the Sustainable Development Goals (SDGs) [3]. To reestablish and achieve a consensus within the community regarding the LA21 action plan, it has been deemed necessary for government officials to actively facilitate and encourage communication among community members [2].

Furthermore, the United Nations has recently launched the 'Local2030' initiative as a successor to the LA21. Although the Local2030 initiative overlaps with LA21's goals, this programme is more focused on rectifying the problems that have emerged since the creation of LA21. The program was initiated in 2016 via the Secretary-General of the United Nations in an immediate response to the appeal for action put forth by the 2030 Agenda for Sustainable Development. The Local2030 initiative is an internationally recognised framework that outlines the 17 SDGs and their corresponding 169 targets, which seek to address a variety of economic, environmental, and social problems. The Local2030 initiative aims to enhance the agency of local key stakeholders, such as local governments, civil society organisations, and communities, in assuming responsibility for the SDGs and effectively executing them within their unique circumstances. The promotion of SDGs localisation is facilitated by encouraging vital local stakeholders to formulate and execute plans, regulations, and initiatives that align with international objectives.

Simultaneously, following the present wave of digitalisation, the recognition of the significance of e-government systems has been integrated into the United Nations' SDGs. The significance of e-government empowerment has explicitly been emphasised in the 16th goal, which underscores the imperative of guaranteeing "peace, justice, and strong institutions." According to the official classification provided by the United Nations, Goal 16 of the Sustainable Development Goals is to support sustainable development in peaceful and inclusive communities. This entails ensuring universal access to equality and establishing robust, accountable, and democratic structures at all levels. This statement underscores the significance of guaranteeing universal liberty and justice and safeguarding individuals from violence, discrimination, and abuse. From a government-to-citizen (G2C) standpoint, promoting peaceful and inclusive societies is a vital responsibility of the government in charge of implementing Goal 16. This goal aligns with the overarching objective of the

SDGs, which aims to ensure that no individual is left behind and to foster a more sustainable, equitable, and democratic society.

Within the realm of e-government, this goal can be interpreted as establishing an easily understandable, direct, and accountable public sector, with a deliberate emphasis on transparency towards its citizens [3]. The effectiveness and capacity of public sector administration in delivering high-quality public services can be significantly enhanced by incorporating various components. These components encompass substantial public participation, inclusive monitoring, and a strong acceptance of diverse views and perspectives. This approach also reduces red tape and improves governance within government departments [4]. The previously mentioned idea pertains to the fundamental notion that individuals should be granted access to government sector information that is specific or publicly accessible sources and employ such resources to engage in the process of policymaking and ensure governmental transparency and responsibility.

The present state of technology offers many benefits that have generally enhanced the standard of life for individuals and organisations [5,6]. Advancements in housing, infrastructure, governance, and urban planning have contributed to the improved living conditions and sustainability of urban environments, benefiting their inhabitants. The current digital era has notably facilitated the democratisation of having access to information, enabling citizens to engage with their respective governments [7]. Integrating public participation and digital technology has led to the development of electronic participation, also known as e-participation platforms. Governments have adopted these platforms globally to facilitate communication between the government and the citizens. Nevertheless, implementing e-participation, particularly within the government sector, is not novel. However, it frequently receives insufficient attention from the government's standpoint and the individuals who utilise the platform.

According to the latest report on the E-Participation Index 2022 from the United Nations (2022), it is evident that Malaysia's E-Participation Index ranking has shown improvement from 2014 to 2020. However, it is essential to note that this improvement does not necessarily indicate that Malaysia's e-participation performance in the e-government project has reached an adequate stage. The fluctuation of Malaysia's position and value on the E-Participation Index has resumed following 2020. In 2022, Malaysia experienced an enormous decrease in its ranking on the E-Participation Index, falling from the 29th to 47th out of 193 nations worldwide. Simultaneously, there was a notable decline in Malaysia's E-Participation Index, with a decrease from 0.8571 in the year 2020 to 0.6818 in the latest year, 2022.

Furthermore, this issue also serves as a contributing element to the decrease observed in the Open Government Data Index (OGDI), which is derived from the Online Service Index (OSI), which is among the three subindices of the United Nations E-Government Development Index (EGDI) [6]. Open government data can be defined as a collection of policies that foster transparency, accountability, and the production of value via facilitating access to government data for all members of society. Public entities generate and procure substantial volumes of data and information. Public institutions enhance their transparency and accountability to their citizens by always ensuring the availability of their datasets. Governments foster the establishment of businesses and the development of citizen-centric services by promoting the utilisation, recycling, and unrestricted dissemination of datasets. In 2020, Malaysia's Open Government Data Index (OGDI), measured by the Open Society Institute (OSI), yielded a value of 0.8529. Subsequently, the index value has consistently declined, reaching its most recent recorded value of 0.7630 in 2022. Hence, this suggests that the level of public information sharing in Malaysia remains relatively limited. The index represents a comprehensive international endeavour to quantitatively assess the extent to which governments prioritise transparency in their administrative practices, as citizens perceive it in terms of their experiences and perspectives on government data accessibility.

Pondering the acceptability of e-participation in the Malaysian public sector, it is essential to acknowledge that each person's diverse and sometimes limited levels of knowledge and experience in utilising government-provided e-participation platforms can present a significant obstacle to fostering participatory interest [8]. Input from the public is vital to the success of Malaysia's public sector administration, as evidenced by various scholarly studies. Administered a study on public participation within the context of the Subang Jaya local government, public participation practices within the Seremban Municipal Council [9]. These studies highlight the significance of public participation within the decision-making processes of local government in Malaysia. Local governments in Malaysia must maintain constant monitoring regarding the extent of e-participation utilisation [10]. This is crucial to facilitate effective planning and policy implementation within their jurisdictions. Nevertheless, the underlying factors that cause to the implementation of e-participation initiatives at the level of local governments in Malaysia [11]. Instead, their studies primarily focus on the community's level of awareness regarding these programs within the local government context. Thus, further study is needed to explore other aspects connected to technology use that may affect the amount of acceptance or rejection of e-participation in governments throughout Malaysia [12].

Hence, the goal of this study is to ascertain the factors that potentially impact users' acceptance to adopt e-participation applications within the public sector of Malaysia. Moreover, the fundamental structure of this research is based on the Unified Theory of Acceptance and Use of Technology (UTAUT). In the same time, the Technology Readiness Index (TRI) also will be utilised in this study in strengthening the proposed model. This paper aims to elucidate the developmental process of the model, as mentioned earlier, which entails multiple stages of work. The present study builds upon prior research conducted on e-participation technology. It draws upon the theory of innovation acceptance analysis, as well as various other scholarly sources, to develop a comprehensive model.

2 Literature review

2.1 E-participation background

It was in the 1990s when the concept of "e-participation" first emerged in the United States (US), when web-based internet technology was utilised in the management of US government departments, commonly referred to as electronic government (e-government) [13]. Subsequently, European Union (EU) countries began embraced the e-government to effectively leverage the values of democratic nations by employing technological tools. Furthermore, the instantaneous expansion of the e-government platform in numerous European Union member states has led to an augmentation in citizen participation within the public sector [14].

Hence, via using an e-participation system might improve participation by citizens in government programmes. This would allow individuals to express their viewpoints, offer suggestions, and contribute ideas towards enhancing the effectiveness and efficiency of public administration. Additionally, it can foster improvements within the public service delivery and the development of inclusive public policies that reflect citizens' perspectives. Since the 1990s, e-participation within the public sector has seen notable international growth. This growth aims to broaden the scope of democratic procedures and to address the concern of marginalised groups being excluded from participation [15]. Within international politics, the US public sector saw dramatic growth in the number of e-government programmes implemented via e-participation at all levels of administration [16]. In the subsequent year, the United States public sector witnessed a significant surge in the

momentum for e-participation, primarily driven via the Open Government Directive of 2009 issued by the Obama administration. This directive forced immediate responses from Federal agencies and local governments, leading to the implementation of various e-participation elements in their administrative processes. These features included e-consultations via the utilisation of social media platforms [17].

Since the early 2000s, most European government institutions have been seen as an efficient way to rebuild trust in public sector organisations, reinforce their authority, and re-engage people via e-participation [17]. It was predicted that implementing e-participation strategies might help solve the "democratic deficit" in Europe's public sector [18]. The concept of "democratic deficit" pertains to the perceived absence of democratic representation and accountability within the decision-making mechanisms of a political system or organisation. This statement proposes the existence of a disparity or asymmetry between the authority wielded by elected officials and the substantive impact that citizens possess in shaping policy formulation and governance.

2.2 E-participation definitions

The definition of e-participation has been the subject of extensive scholarly discourse within the realm of public sector academia, primarily in response to the rapid advancements in innovation [19]. E-participation contributes a crucial responsibility in facilitating the utilisation of ICT technology to gather data, intending to promote both top-down engagement and bottom-up efforts [20]. This approach seeks to encourage the proactive participation of the public, civic groups, and potentially other politically oriented organisations in leveraging the assistance provided by their elected representatives. Using the internet and other digital media, "e-participation" is suggested to improve dialogue between people and government officials and even between citizens themselves [21]. This approach aims to address a defined set of policy issues. In this context, e-participation can be defined as the active engagement of individuals in utilising digital tools to participate in community affairs or policy initiatives [22]. E-participation encompasses e-government initiatives that enhance community influence on policy-making processes and foster online communities [23]. This is achieved by allowing citizens to express their opinions and viewpoints on policy initiatives while engaging in dialogue.

Furthermore, e-participation can be conceptualised as a mechanism that amplifies and enriches political engagement, enabling individuals to engage in dialogue with both their elected officials and public servants through the utilisation of information and communication technologies [24]. E-participation pertains to the utilisation of contemporary digital technology tools to facilitate and boost the participation of citizens within the public administration [25]. The manifestation of e-participation encompasses diverse modalities, such as virtual consultations, electronic voting, online petitions, and engagement through social media platforms. The e-participation platform encompasses not only traditional digital platforms such as websites, emails, social media platforms, and mobile telephones/smartphones but also incorporates innovative methods for leveraging more modernised and sophisticated technologies, for instance, open government data, chatbots, artificial intelligence, cloud computing, Internet of Things (IoT), gamification, and big data [26].

2.3 E-participation in public sector

E-participation facilitates and encourages active engagement in various public sector services, enabling governments to establish direct communication channels with their citizens via digital technologies. By enhancing the government's ability to actively seek,

obtain, and incorporate public input, policy actions can potentially be modified to align with the preferences and demands of the public [27]. The digital-enabled methods of participation encompass various platforms such as online forums, digital voting systems, online communities or bulletin boards, virtual decision-making games, social networking platforms, and recommendation tools for public policy development processes [28].

E-participation offers citizens improved tools for accessing information and engaging with political matters subject to debate, discussion, and legislation [29]. Consequently, it satisfies their need to being connected to the political process while also drawing attention to themselves. On the contrary, it offers governments a means to facilitate the advancement of novel strategies for promoting and fostering public consultation [30]. There is a significant emphasis placed on the individual citizen and strategies to foster motivation, engagement, and sustained participation to facilitate robust public participation in decision-making processes [31,32]. This, in turn, e-participation aims to cultivate a more effective society and garner support from the government [33].

However, numerous academicians have identified various factors that can potentially contribute to the failure of e-participation implementation. The factors leading to the challenges of implementing public participation encompass citizens' lack of preparedness, misconceptions, lack of awareness, inadequate facilitating conditions, limited alternative approaches, minimal utilisation, the presence of a digital divide, insufficient representativeness of participating members, limited political support, and issues related to trust [34].

Despite numerous endeavours to establish successful e-participation initiatives within the contemporary public sector, ineffective implementation persists, leading to project failure and the squandering of taxpayer resources [35]. There is a contradiction in the current landscape of developing countries, wherein local societies are actively advocating for an enhanced role in formulating government policies. Therefore, embracing e-participation is a practical strategy for boosting government-citizen relations [36].

Various countries have made efforts to implement e-participation platforms. However, the study reveals that these attempts have encountered challenges, as the reception from the public users is uninteresting and less pleasing. This phenomenon can be attributed to the lack of emphasis placed by government institutions on the necessity of considering multiple factors to ensure the seamless utilisation of e-participation platforms [37]. Moreover, establishing mechanisms to facilitate efficient e-participation in developing nations is still in its new development phase [38].

Despite the challenges encountered by certain public sector agencies in Malaysia in effectively implementing e-participation practices, all levels of government in the country have placed significant importance on initiatives to establish platforms for e-participation. This study examines a selection of e-participation approaches employed by government agencies in Malaysia, drawing from various e-participation platforms available. The following examples are among the selected e-participation platforms currently available.

2.3.1 MyGovernment portal

The MyGovernment Portal, an initiative of MAMPU, is regarded as a highly significant e-participation project. This portal is a centralised platform that adheres to citizen-centricity principles and daily activities. It serves as a "single gateway" through which individuals can conveniently access a wide range of government-provided online information and services (MAMPU, n.d.). Moreover, this digital platform serves as a means for individuals to engage in policy-making processes across various government tiers by using tools such as surveys, discussions, and assessments. In addition to the portal mentioned above, citizens can contribute their input to government agencies regarding policy and service delivery

(MAMPU, n.d.). To improve the effectiveness of government operations in Malaysia, several e-participation initiatives have been introduced through the MyGovernment Portal, as depicted in Figure 1 below.

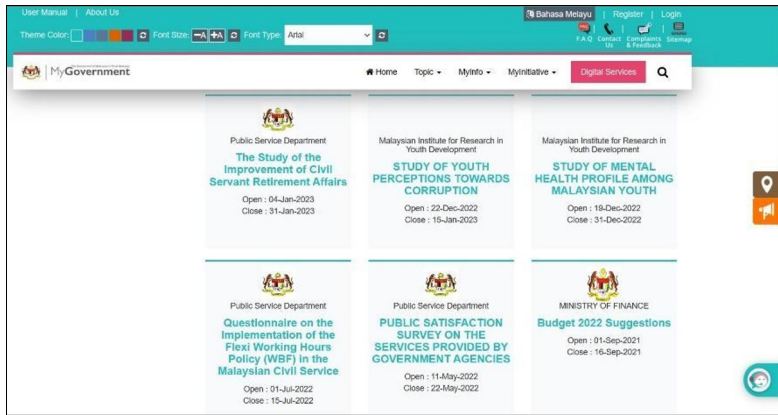


Fig. 1. Examples of MyGovernment Portal E-participation Program (MAMPU, n.d.)

2.3.2 *i-Tegur*

The *i-Tegur*, initially called *iKepoh*, is an e-participation initiative introduced by Malaysia's Ministry of Housing and Local Government (*Kementerian Perumahan dan Kerajaan Tempatan* or KPKT). The *i-Tegur* application was formally introduced by the former 7th Prime Minister of Malaysia, Tun Dr Mahathir Bin Mohamad, through the Ministry of Housing and Local Government (KPKT) in December 2018. The goal of this platform is to improve interaction between residents and their municipal authorities, specifically concerning the submission of complaints or the initiation of discussions about issues that impact their residential areas. The primary goals of *i-Tegur* encompass fostering a harmonious relationship between local governments and residents by providing a user-friendly digital platform for lodging complaints. In addition to improving citizen satisfaction with local government services, *i-Tegur* will make tracking and responding to citizen concerns easier. A screenshot of the *i-Tegur* mobile application's user interface is shown in Figure 2.

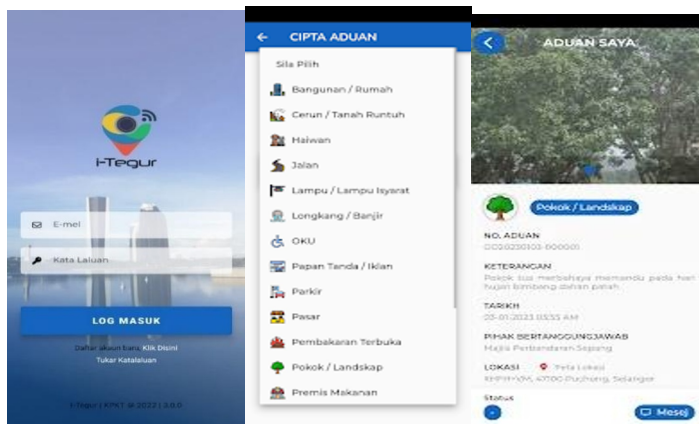


Fig. 2. Screenshot of User Interface of *i-Tegur* Mobile Application (Google Play, n.d.a)

2.3.3 City Council of Seberang Perai (MBSP) Mobile Application - MyMBSP

MyMBSP is a cutting-edge mobile application developed by the City Council of Seberang Perai (MBSP) in Penang, Malaysia. Its primary purpose is to enhance public participation by providing a single access point for citizens to engage with the local government. The application offers features such as e-participation, digital communication with government officials, e-payment resources, online tendering, and the ability to report specific problems within local communities. The MyMBSP mobile application represents the most recent initiative undertaken by the City Council of Seberang Perai to enhance the array of communication channels available to individuals for lodging complaints and engaging in discussions via mobile devices. This application enables citizens to submit complaints, suggestions, and queries to the Council in a more expedient, adaptable, and effective manner. Additionally, it grants citizens access to specific information recently released by the City Council. Figure 3 displays a screenshot depicting the user interface of the MyMBSP application.



Fig. 3. Screenshot of User Interface of 'MyMBSP' mobile application (Google Play, n.d.b)

2.3.4 Unified Public Consultation (UPC)

The utilisation of UPC has the potential to permits Malaysian citizens to participate actively in formulating government policies. The UPC platform facilitates the expression of citizens' opinions and perspectives regarding government programmes and policies. The current entity responsible for the administration of the UPC is the Malaysia Productivity Corporation (MPC). The UPC platform consolidates governmental conversations into a centralised online portal, enhancing accessibility and convenience for the general public. In addition, the implementation of UPC will support the Malaysian government's efforts to boosting the accountability, transparency, and inclusivity in the administration of public affairs. In order to effectively address their concerns within the government's policy-making process, concerned citizens and other relevant stakeholders can navigate the online portals of the respective government regulatory agencies. However, it is significant to keep in mind that these portals' designs and approaches might range from simple to complicated. Including and recognising stakeholders' perspectives can enhance transparency and accountability, facilitate the enhancement of determinants, mitigate the risk of policy failure, and bolster public support through effective stakeholder engagement. The home page of the UPC e-participation portal is depicted in Figure 4.

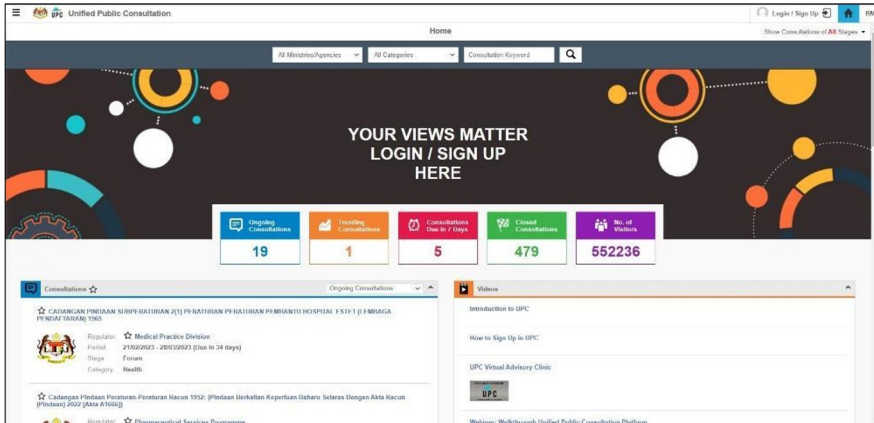


Fig. 4. Main Page of UPC Portal (Unified Public Consultation, n.d.)

The UPC portal has facilitated the integration of e-participation programmes among various federal, state, and local government agencies in Malaysia. Users are asked to offer helpful feedback and ideas to these agencies through this online platform. The e-participation process is anticipated to encompass three phases of stakeholder and public consultation on regulatory issues facilitated through utilising the UPC website. The three phases of the process include the 'Forum Discussion', the 'Preliminary Consultation', and the 'Final Consultation'.

The stage of 'forum discussion' serves as an initial step in identifying the problems. Regulatory bodies can initiate discussions on subjects to solicit constructive feedback and gain a deeper understanding of issues that have garnered public interest and potentially necessitate governmental intervention.

The 'preliminary consultation' stage occurs when the regulatory body examines the matter(s) and concludes that government assistance might be necessary. This point marks the significance of the information acquired from forum discussions. This first report introduces the problem, its causes, the effects that result from disregarding it, and some possible solutions. Public release of the written report or distribution of the material to stakeholders is essential to the consultation process. This allows for evaluating the analysis's quality and the feasibility of any possible alternatives.

Once the recommended conclusive policy framework and official regulations are available, a 'final consultation' phase is initiated to engage with stakeholders. During this phase of consultation, the regulatory body will offer additional information regarding the proposed solutions, including specific actions or measures. The findings of the initial consultations will now be duly taken into consideration.

2.4 Digital technologies acceptance

Despite the previous efforts, while citizen-public official contact is vital, only a small number of academics have effectively explored the elements affecting the acceptance of e-participation in this field. The existence of this gap was noticed and documented in both empirical and theoretical contexts. When considering the acceptance of e-participation among users in Malaysia, it is essential to acknowledge that individuals' diverse and sometimes limited levels of proficiency and understanding of government-provided e-participation platforms can present a significant obstacle to enabling participation [39].

For example, as demonstrated through specific case studies, such as the topic of public participation within the local government of Subang Jaya and public participation practises

within the Seremban Municipal Council [39-40]. Local governments in Malaysia must maintain constant vigilance regarding the extent of e-participation utilisation [40]. This is crucial to facilitate effective planning and successful implementation of policies within their respective jurisdictions. However, the existing studies are unsuccessful in providing a comprehensive analysis of the underlying factors that contribute to the utilisation of e-participation. Instead, they primarily focus on the general awareness of the programme within the community.

The focus was on examining user evaluations of e-participation usage on the Malaysian e-government website [41]. It has been discovered that despite the substantial endeavours undertaken by the Malaysian government to enhance e-participation, there remains a shortage of evaluation about the user experience, particularly concerning the factors on user acceptance of e-participation. Furthermore, they highlighting significant obstacles in advancing e-government within the Malaysian public sector [42]. These challenges encompass the persistence of conventional service delivery models, reluctance among officials to embrace cultural transformations within their organisations, client preference for in-person services, and limitations in providing information technology training. Therefore, it is crucial to undertake more studies to find other elements that can affect people's propensity to accept or reject the usage of e-participation across different levels of the Malaysian government.

An acceptance of new digital technologies by users or organisations is primarily based on the extent to which such technologies enhance task performance in quickness and effectiveness (Amron et al., 2019). Still, the efficacy and advantages of this technology for users are based on various factors and contexts. The concept of "acceptance" can result in two scenarios: the user willingly embraces or rejects the technologies [43]. Acceptance, as defined by Davis et al. (1989), refers to the users' determination regarding the manner and timing of their utilisation of technology. The practical implementation of any system relies heavily on the individual's acceptance and willingness to utilise the innovation. This broader description describes how people often take to using computers and other electronic devices.

Despite being a relatively emerging field of study, e-participation has garnered considerable attention within the domain of public sector research. When examining the prevalent challenges and issues that frequently influence users' acceptance and utilisation of emerging technologies, numerous factors demand evaluation earlier than users or organisations embracing acknowledged technology. Numerous research endeavours have been undertaken to assess the degree of users' acceptance of the deployment and utilisation of e-participation within the public sector. Moreover, it is believable that specific models and theories may incorporate additional variables that have the potential to influence user acceptance across diverse and multifaceted settings.

Several prior models and theories concerning modern technology and human behaviour to construct a comprehensive model aimed at understanding the phenomenon of technology acceptance. Some selected established models and theories have been identified for consideration for this study. These include Theory of Reasoned Action (TRA), Social Cognitive Theory (SCT), Technology Acceptance Model, Theory of Planned Behaviour (TPB), Model of Personnel Computer (PC) Utilization (MPCU), the Motivational Model (MM), Innovation Diffusion Theory (IDT), and Combined TAM-TPB model. Subsequently, introduced a synthesised model known as the Unified Theory of Acceptance and Use of Technology model (UTAUT)[44]. The UTAUT framework is an inclusive research framework that integrates previous models and theories discussed earlier, with a specific emphasis on analysing individual acceptance of digital technologies [45,46].

2.5 Unified Theory of Acceptance and Use of Technology (UTAUT)

The UTAUT model, as an extension and consolidation of various preceding models and theories that explore users' acceptance and adoption of technology. The model consists of the four fundamental variables encompassed in this study performance expectancy, effort expectancy, social influence, and facilitating conditions [47]. Furthermore, the UTAUT model encompasses four moderating variables that account for group disparities, consisting gender, age, experience, and voluntariness of use. These variables explain the connection between the primary variables, behavioural intentions, and user behaviour (Venkatesh et al., 2003). Researchers commonly employ theoretical frameworks to clarify and forecast individuals' tendencies towards adopting and utilising technology [48,49].

The UTAUT framework's strength is derived from its foundation on multiple models, which offers researchers a comprehensive perspective on existing models [50]. Furthermore, the UTAUT exhibits a higher level of explanatory capability due to its utilisation of conceptual and empirical commonalities and differences found in previous predominant models. This approach allows for formulating a comprehensive theoretical framework [51]. Figure 5 illustrates the interconnections among the primary, moderator, and predicted constructs within the UTAUT.

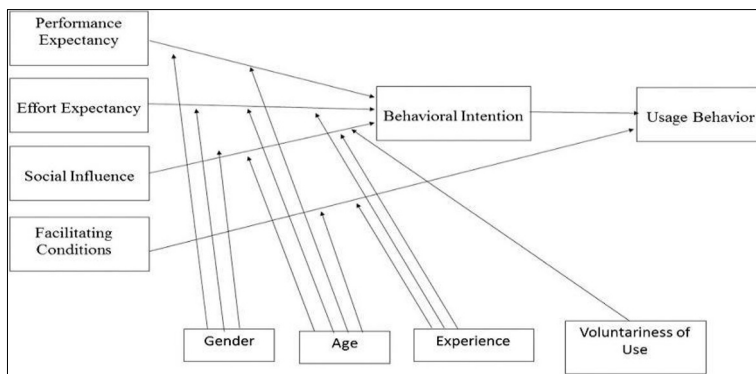


Fig. 5. UTAUT model [51]

2.6 Technology Readiness Index (TRI)

The TRI model is another widely employed assessment tool for evaluating a person's preference to utilise technology. The TRI model describes how people in different contexts are more or less likely to accept and make use of modern technologies [52]. The TRI is considered appealing due to its incorporation of both positive and negative perspectives on technology views [53].

The Technology Readiness Index (TRI) comprises two primary components: drivers and inhibitors to technology integration [54]. The drivers of TRI include optimism and innovativeness, as depicted in Figure 6. In contrast, discomfort and insecurity are identified as inhibitors of TRI. Optimism is characterised by a favourable perspective towards technology, wherein individuals believe it gives them enhanced control, adaptability, and effectiveness in various aspects of their lives. On the other hand, innovativeness pertains to susceptibility to assume the role of a technological innovator and influential thinker. As mentioned earlier, the subcategories serve as the drivers for enhancing technology readiness and acceptance. In contrast, feelings of discomfort and insecurity serve as inhibitors factors influencing not to use technology. Discomfort is associated with the subjective perception of feelings of helplessness and being overpowered by technology. Insecurity is characterised by

a lack of trust in technology, driven by scepticism regarding its potential negative ramifications.

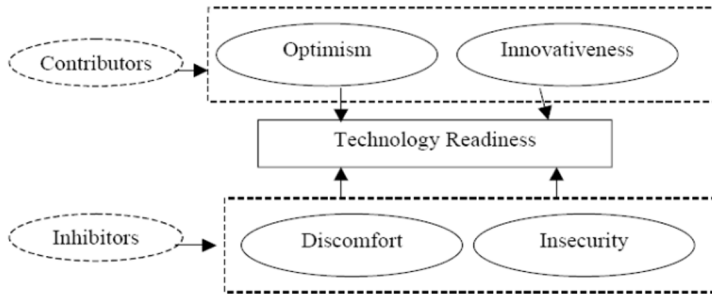


Fig. 6. Technology Readiness Index (TRI) model [52]

TRI was utilised at people's readiness to use e-government technologies for the Malaysian Inland Revenue Board case study. The model is employed to predict and comprehend the key factors impacting taxpayers' preference to adopt or reject e-filing systems. The suitability of the TRI model in identifying the level of digital technology acceptance among Malaysian e-government users has been discovered [53].

However, studies about utilising the TRI model primarily focus on the marketing and business domain, with a little investigation conducted within the public sector context in Malaysia. An investigation employed the same TRI model to examine the preference of small and medium-sized entrepreneurs (SMEs) within Malaysia towards adopting the Internet of Things (IoT) as their study of e-commerce purposes [54]. In addition, performed additional research to learn what influences consumers' confidence in their ability to switch to cashless payments [55]. Using the TRI 2.0 model, they also analysed the mediating effects of risk and intrinsic motivation in explaining why certain Malaysians are more likely than others to use digital payment systems.

Hence, drawing from previous scholarly assessments, it becomes apparent that several notable aspects deserve inclusion in this study. These aspects encompass the absence of research about individual analysis of e-participation acceptance within the Malaysian public sector and the influence of individual readiness on their preference to accept the utilisation of e-participation [56].

3 Methodology

A technological research technique proposed was used to compile the theoretical overview of the literature. The development of the model involved using primary sources: a review of relevant theories and models, an analysis of literature reviews, an examination of related literature, and consultation of additional sources [57].

This study incorporated all four primary constructs of the UTAUT: performance expectancy, effort expectancy, social influence, and facilitating conditions. This study's models were selected because they have previously been shown to be useful for describing users' acceptance to new technologies [57]. Given that this study represents the initial investigation into the fundamental factors influencing e-participation within the Malaysian public sector, the rationale for adopting the factors from UTAUT is deemed appropriate as a solid basis for this study. Moreover, the UTAUT possesses validity and exhibits a robust theoretical integration, thereby facilitating the examination of individual-level adoption by encompassing the consumer context.

For enhancing the proposed model and introduce an original component to the study's context, the TRI model has been incorporated. This will facilitate the assessment of an individual's readiness to accept e-participation. It is recommended that TRI models be proposed to examine various antecedents and consequences. This is important for strengthening the TRI model and expanding the existing four factors [58]. The inclusion of TRI in this model aligns with the suggestions, which suggest testing TRI in diverse geographical areas and interactive contexts and services. This approach aims to determine whether the findings are consistent across various contexts [59].

Subsequently, the present study undertook a comprehensive examination of existing scholarly literature to ascertain the determinants influencing the acceptance of e-participation within the public sector of Malaysia. the researchers used thematic analysis to weigh the significance of the variables included in the earlier research. To determine the essential elements proposed by earlier research regarding the acceptability of e-participation across different domains, an extensive review of a total of 36 research articles was done. The preceding studies have provided valuable insights that inform the model development for this research study. In brief, the model incorporates four factors from UTAUT: performance expectancy, effort expectancy, facilitating conditions, and social influence. An additional set of four factors is derived from the TRI model: optimism, innovativeness, discomfort, and insecurity.

4 Proposed Model

As mentioned, this study has employed a conceptual framework combining the UTAUT and TRI models. This framework was created to aid in the creation of a model that would evaluate user acceptance and adoption of e-participation in the Malaysian public sector. As depicted in Figure 7, the UTAUT framework encompasses four constructs, namely performance expectancy, effort expectancy, social influence, and facilitating conditions, and the TRI factor comprises four constructs, namely optimism, innovativeness, discomfort, and insecurity, which also play a role in expediting the e-participation acceptance.



Fig. 7. Research proposed model

4.1 UTAUT factors

4.1.1 Performance expectancy

Individuals' levels of confidence in a certain technology's ability to enhance their performance at work and/or their productivity are known as their "performance expectancy." [12]. Suppose individuals hold the belief that the utilisation of technology will enhance their ability to complete tasks in a more efficient, effective, or successful manner. In that case, their expectations regarding performance will probably be elevated. Considering this, it is anticipated that users will possess elevated expectations regarding the efficacy of the technology, potentially leading to enhanced levels of acceptance and utilisation. When people

have confidence that a new piece of technology will improve their efficiency, they are more likely to adopt and use it [12]. Furthermore, this methodology can be applied in mandatory and voluntary situations, and it represents the most efficient predictor variable for predicting future behaviour [12].

Individual's performance expectancy in the context of e-participation in the public sector is the degree to which they believe that their participation in online activities will allow them to benefit personally or help others, thereby improving the efficiency of public institutions. Simultaneously, the government's recognition of the expectation of performance suggests an understanding that engaging in participation activities can enhance productivity and mitigate the presence of inefficient bureaucratic processes. E-participation technologies, including online petitioning, online complaint applications, and online participatory budgeting, encourage the utilisation of digital tools for individuals to articulate their concerns through various mediums, such as text messaging, images, and videos.

Furthermore, this basis facilitates individuals who embrace innovative concepts to attain distinct advantages over alternative technologies within the organisation [57]. Organisations frequently determine the advantages and user-friendliness of e-participation as critical considerations before embarking on its implementation and utilisation by the user. The organisation seeks to achieve a positive return on investment and enhance business growth through substantial financial contributions. Hence, it can be believed that there is a reasonable basis to suggest that performance expectancy will substantially impact the acceptance of individual e-participation.

4.1.2 Effort expectancy

The term "effort expectancy" refers to people's expectations of how simple it will be to learn and utilise new technologies [58]. The level of effort expectancy a user exhibits indicates their confidence in encountering minimal obstacles while utilising the technology under consideration. The level of effort expectancy that citizens exhibit towards new technologies may be influenced by their perception that adopting and utilising said technologies would be straightforward and not overly demanding in terms of the time and resources required. The difficulty of learning related to using a particular technology diminishes over time once it is frequently utilised over an extended duration [59].

These aspects are other vital indicators of acceptance and readiness to participate in e-participation. E-participation in the public sector is specifically tailored and intended for utilisation by the public. Because e-participation is voluntary, individuals can devote significant attention to community-oriented activities rather than solely to their interests. Consideration of the perceived effort needed for participating in e-participation is important at the community level since it may considerably affect other people's desire to participate. A significant barrier to achieving effective e-participation was users' lack of digital skills [60]. E-participation tools are widely perceived to possess a high degree of user-friendliness. Consequently, individuals who encounter challenges in successfully using e-participation exhibit resistance to engaging in such activities.

This scenario will make users and organisations susceptible to the inability to leverage emerging technologies effectively. When implementing new technology, organisations must prioritise the development of simple and easy-to-use systems. This phenomenon can heighten users' predictions regarding the effort required to effectively utilise a given technology, strengthening their attraction to participate in e-participation. This can be achieved by providing training and support to assist users in overcoming any difficulties they may encounter. Hence, individuals who possess a sufficient level of effort expectancy exhibit a higher preference towards accepting e-participation.

4.1.3 *Social influence*

The concept of social influence factor pertains to the extent to which an individual thinks that influential individuals hold the belief that they should adopt the new system [12]. The level of support from one's peer group plays a crucial role in adopting and consistently using new technology [12]. The study into the necessity of technology for users may be determined by societal factors [12]. The pressure of technology usage on individuals may lead to a sense of negativity [12].

While from the angle of social psychology, social influence refers to the phenomenon wherein interactions and connections with different people shape an individual's perspectives, attitudes, and actions [12]. There exist multiple processes through which individuals in society can be affected by others, encompassing deliberate convincing, societal pressure to comply, and comparisons with others. An individual's social network can positively and negatively impact their overall well-being [61]. The impact of peer influence can lead to favourable alterations in an individual's motivation, self-esteem, and social support, all of which positively affect the individual's behaviour and overall well-being [62]. In contrast, social influence can result in various negative consequences, including but not limited to pressure, stress, and the emergence of unfavourable attitudes or behaviours [63]. Within this study, it is advisable for government organisations in Malaysia that provide advanced technologies to their constituents to consider the significance of influential individuals when striving to enhance citizens' readiness and acceptance.

Furthermore, the acceptance of e-participation may be influenced by social factors such as the involvement of individuals on online social media networks, affiliation with political individuals, and influential figures [64]. The support and motivation provided by individuals can catalyse for others to engage in e-participation and contribute their ideas. This, in turn, enhances the likelihood of increased system utilisation, particularly within public sector agencies. A study that emphasised the user's reliance on feedback and the experiences of early adopters when engaging with new technologies. Hence, the phenomenon of social influence will impact the level of acceptance displayed by individuals towards utilising e-participation.

4.1.4 *Facilitating conditions*

Facilitating conditions refer to how well a person believes an organisational and technological infrastructure exists to assist the system's usage [65]. The factor can determine whether an individual positively or negatively impacts their technology adoption and use. For instance, users may possess more facilitating conditions to facilitate their transition to new technology. These conditions may include having access to the necessary hardware and software, experiencing adequate instruction, and having readily available technical assistance to support them using [66]. When people believe that the system's condition is in a favourable state, they are more likely to accept and use novel technology well.

The UTAUT demonstrates that the variable of facilitating conditions directly influences the user's behaviour. This study also draws attention to the importance for Malaysian government organisations to provide adequate training and support to their personnel before citizens to facilitate the successful adoption and utilisation of new technologies. This might include giving people the tools they need to succeed, including computers and software, as well as giving them the chance to learn how to use them properly.

Within the realm of e-participation in public sector, the facilitating conditions can vary significantly among individuals due to disparities in technological resources and challenges related to digital divides [66.67]. Furthermore, a literature study of e-participation for smart highlighted that numerous governments' software tools are not fully utilised by their citizens

due to various factors, with technical barriers being the most common problem for them to use e-participation.

4.2 TRI factors

The optimism factor in e-participation pertains to a favourable or positive belief concerning using electronic methods for public participation in public deliberation and decision-making procedures. The perception is that e-participation programmes and their technologies have the potential to generate favourable outcomes and advantages for both citizens and governments. When individuals have a positive outlook regarding e-participation, they are more willing to involve themselves and actively participate in online platforms, forums, or other digital channels created explicitly for public participation. The cultivation and preservation of optimism within e-participation endeavours are of utmost significance, necessitating the establishment of well-crafted, user-centric, secure, and inclusive platforms. Government organisations would need to exhibit the impact and worth of e-participation by providing feedback on citizen contributions, implementing changes derived from public input, and consistently communicating with them about benefits of e-participation processes.

The factor of innovativeness, which can be understood as an individual's positive preference towards exploring new concepts and embracing change within an organisation, is a distinguishing characteristic that sets apart those who adapt to organisational transformations. Studying new techniques and recent advancements will acquaint consumers with other efficient approaches, ultimately enhancing quality. The presence of a forward-thinking user and service provider can significantly enhance work performance, making it more efficient and easily accessible. Incorporating and leveraging new technologies and online resources to enhance public participation is crucial to innovativeness. Citizens can be involved in decision-making by utilising various technological tools such as social media, mobile applications, online forums, crowdsourcing platforms, and other innovative mechanisms. Moreover, the aspect of innovativeness in e-participation frequently entails the willingness to engage in the exploration of innovative methods and strategies. This may encompass implementing new platforms, experimenting with unique citizen participation methods, or investigating inventive approaches to gathering and analysing citizen input. This also entails proactively soliciting participant feedback, closely monitoring e-participation initiatives' efficacy, and making necessary adjustments informed by acquired knowledge and emerging exemplary approaches. This necessitates an individual psychological orientation welcoming to any modification and adjustment. The process entails acknowledging individuals' dynamic requirements and preferences while also being receptive to advancements in technology and societal changes.

On the other hand, the discomfort factor relating to e-participation relates to the senses of unease, doubt, or negativity that individuals may encounter while engaging in online platforms or activities designed for public participation and the decision-making process. Specific individuals may experience unease or reluctance when engaging in e-participation efforts because of their limited exposure to digital technologies or insufficient proficiency in digital literacy. Individuals may encounter difficulties managing online environments, giving input, or recognising the technological requirements, resulting in unease. Being exposed to certain situations or circumstances can cause feelings of vulnerability in individuals, which in turn may result in the sense of unease or hesitation to engage or partake in indicated situations. Furthermore, in today's online environments, individuals are vulnerable to encountering online insults, abuse, or unpleasant interactions by irresponsible online users. Individuals who have encountered negative experiences in the past or perceive potential risks associated with e-participation activities may experience discomfort when engaging in such activities.

The insecurity factor pertains to the emotional states of confusion, nervousness, or risk that individuals may encounter when participating in online platforms or engaging in public participation and decision-making activities. This technical issue includes concerns regarding user privacy, safeguarding of data, and possible threats linked to disseminating personal information or describing viewpoints on the internet anonymously. Individuals may experience a sense of insecurity regarding the confidentiality of their data when engaging in e-participation endeavours. Individuals may experience concerns regarding gathering, retaining, and possibly misusing their personal information, resulting in feelings of unease or hesitancy to participate. The Malaysian public sector is affected by ongoing debates surrounding various issues, including security, privacy data, and implementation costs [68,69]. Moreover, insecurity can arise due to a deficiency in confidence towards the e-participation process or the governing authorities responsible for its oversight. Concerns regarding the level of transparency in the decision-making process, the degree of responsiveness to citizen input, and the potential influence of external interests within the public sector can cause insecurity. Therefore, governmental organisations must establish a secure and reliable environment for the e-participation process. This will enable individuals to engage confidently and provide valuable feedback that contributes meaningfully to decision-making processes.

5 Discussion and conclusion

This study undertook a comprehensive examination, analysis, and formulation of a research framework for the acceptance of e-participation by users within the public sector of Malaysia. As mentioned earlier, factors uncovered in prior research and the literature are incorporated into the UTAUT and TRI models that form the backbone of the proposed models in this study. The four fundamental components of performance expectancy, effort expectancy, social influence, and facilitating conditions are included in the proposed model grounded in the UTAUT factor models. Moreover, incorporating the TRI factors strengthens the proposed model developed in this study to determine a person's readiness to use digital technology for e-participation. These elements include optimism, innovativeness, discomfort, and insecurity.

In addition, this research may be helpful to government agencies in figuring out the readiness of their personnel for the beginning of the use of e-participation technologies. There has been an immense increase in the frequency and scope of e-participation in government in Malaysia and other developing nations. Users should not be put under excessive pressure in their optimistic pursuit of digital technology, but this can only be avoided if people are put first. This study added to the knowledge on effectively integrating e-participation by analysing how people respond to today's digital tools. Malaysian public sector policymakers and decision-makers may benefit from the existing approach. The article aspires to explain how to embrace e-participation. Academics and practitioners interested in predicting user acceptance of e-participation services might benefit from using this instrument.

The findings of this research will aid in developing a framework for assessing the effectiveness of existing policies for e-participation, some of which may display inconsistencies between demand and supply. Future studies will be undertaken to evaluate the model since the study is keeping going. The proposed model can be validated using qualitative and quantitative techniques. The qualitative component of the study may involve conducting interviews with multiple experts in the field, including elite interviews with Chief Directors, as well as organising focus group discussions with representatives from different public sector agencies in Malaysia. These interviews and discussions aim to gather insights into the agencies' practises and experiences in implementing and utilising e-participation. The quantitative aspect of this study will entail the collection of data through a survey

administered to personnel within public sector agencies responsible for implementing e-participation systems, as well as their clientele who utilise these systems. The obtained data will be evaluated to verify the accuracy of the proposed model.

This work was funded by the Ministry of Higher Education (MoHE) of Malaysia under Fundamental Research Grant Scheme (FRGS/1/2018/SS02/UUM/02/2). This work is part of a dissertation which was submitted as partial fulfilment to meet requirements for the degree of Doctor of Philosophy at Universiti Utara Malaysia.

References

- [1] Abdullah, W. N. R., Mansor, N., & Hamzah, A. (2013). Keeping ahead of the game: Innovations and challenges in e-government in Malaysia. *The Economic and Labour Relations Review*, 24, 549-567. <https://doi.org/10.1177/1035304613508868>.
- [2] Abidin, N. I., Zakaria, R., Aminuddin, E., Saar, C. C., Munikanan, V., Zin, I. S., & Bandi, M. (2016). Malaysia's Local Agenda 21 : Implementation and approach in Kuala Lumpur, Selangor and Johor Bahru. *IIOAB Journal*, 7, 554-562.
- [3] Aichholzer, G., & Rose, G. (2020). Experience with digital tools in different types of e-participation. *European e-democracy in practice*, 93-140.
- [4] Alharbi, A., Kang, K., & Hawryskiewicz, I. (2016). The Influence of Trust and subjective Norms on Citizens Intentions to Engage in E-participation on E-government Websites. <https://doi.org/10.48550/arXiv.1606.00746>
- [5] Ali, H., Ali, T., Matar, Z., & Jawad, F. (2015). Citizens' acceptance and readiness towards adopting e-participation tools in kingdom of Bahrain. *International Journal for Infonomics*, 8(2), 1029-1036.
- [6] Amron, M. T., Ibrahim, R., Bakar, N. A. A., & Chuprat, S. (2019). Acceptance of cloud computing in the Malaysian public sector: a proposed model. *International Journal of Engineering Business Management*, 11, 1-9. <https://doi.org/10.1177/1847979019880709>
- [7] Armenia, A., & Irina, G. (2022). E-participation in Europe, a comparative perspective. *Вопросы государственного и муниципального управления*, (5), 7-29. <https://doi.org/10.17323/1999-5431-2022-0-5-7-29>
- [8] Balakrishnan, V., & Shuib, N. L. M. (2021). Drivers and inhibitors for digital payment adoption using the Cashless Society Readiness-Adoption model in Malaysia. *Technology in Society*, 65, 101554. <https://doi.org/10.1016/j.techsoc.2021.10155>
- [9] Basri, N. H., Adnan, W. A. A., & Baharin, H. (2019). E-Participation service in Malaysian e-government website: The user experience evaluation. In *Proceedings of the 10th International Conference on E-Education, E-Business, E-Management and E-Learning (IC4E '19)*. Association for Computing Machinery, New York: USA, 342-346.
- [10] Chaputula, A. H., & Mutula, S. (2018). eReadiness of public university libraries in Malawi to use mobile phones in the provision of library and information services. *Library Hi Tech*, 36(2), 270-288. <https://doi.org/10.1108/LHT-10-2017-0204>
- [11] Chauhan, S., & Jaiswal, M. (2016). Determinants of acceptance of ERP software training in business schools: Empirical investigation using UTAUT model. *The International Journal of Management Education*, 14(3), 248-262. <https://doi.org/10.1016/j.ijme.2016.05.005>
- [12] Choi, J. C., & Song, C. (2020). Factors explaining why some citizens engage in E-participation, while others do not. *Government Information Quarterly*, 37(4), 101524. <https://doi.org/10.1016/j.giq.2020.101524>
- [13] Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management science*, 35(8), 982-1003. <https://doi.org/10.1287/mnsc.35.8.982>

- [14] Dhondt, S., Kraan, K. O., & Bal, M. (2022). Organisation, technological change and skills use over time: A longitudinal study on linked employee surveys. *New Technology, Work and Employment*, 37(3), 343-362. <https://doi.org/10.1111/ntwe.12227>
- [15] Donmez-Turan, A. (2020). Does unified theory of acceptance and use of technology (UTAUT) reduce resistance and anxiety of individuals towards a new system?. *Kybernetes*, 49(5), 1381-1405. <https://doi.org/10.1108/K-08-2018-0450>
- [16] Dorasamy, M., Marimuthu, M., Raman, M., & Kaliannan, M. (2012). E-Government services online: An exploratory study on tax e-filing in Malaysia. In *Technology Enabled Transformation of the Public Sector: Advances in E-Government*, 312-325. IGI Global.
- [17] Dwivedi, Y. K., Rana, N. P., Jeyaraj, A., Clement, M., & Williams, M. D. (2019). Re-examining the unified theory of acceptance and use of technology (UTAUT): Towards a revised theoretical model. *Information Systems Frontiers*, 21(3), 719-734. <https://doi.org/10.1007/s10796-017-9774-y>
- [18] Farah, M. F., Hasni, M. J. S., & Abbas, A. K. (2018). Mobile-banking adoption: empirical evidence from the banking sector in Pakistan. *International Journal of Bank Marketing*, 36(7), 1386-1413. <https://doi.org/10.1108/IJBM-10-2017-0215>
- [19] Fashoro, I., & Barnard, L. (2021). Assessing South African Government's Use of social media for Citizen Participation. *The African Journal of Information Systems*, 13(1), 3.
- [20] Fedotova, O., Teixeira, L., & Alvelos, H. (2012). E-participation in Portugal: evaluation of government electronic platforms. *Procedia Technology*, 5, 152-161. <https://doi.org/10.1016/j.protcy.2012.09.017>
- [21] Gong, R. (2020, September 7). *Digital Inclusion: Assessing Meaningful Internet Connectivity in Malaysia*. Khazanah Research Institute. <http://krinstitute.org/assets/contentMS/img/template/editor/20200907%20Inclusion%20v4.0.pdf>
- [22] Google Play. (n.d.a). *i-Tegur*. <https://play.google.com/store/apps/details?id=my.gov.onegovappstore.itegur>.
- [23] Google Play. (n.d.b). *MyMBSP*. <https://play.google.com/store/apps/details?id=my.gov.mpsp.mpspinfo&hl=en&gl=US>
- [24] Hassan, L., & Hamari, J. (2020). Gameful civic engagement: A review of the literature on gamification of e-participation. *Government Information Quarterly*, 37(3), 101461. <https://doi.org/10.1016/j.giq.2020.101461>
- [25] Islam, M. (2008). Towards a sustainable e-Participation implementation model. *European Journal of ePractice*, 5(10), 1-12.
- [26] Khadzali, N. R. (2022). *The Effectiveness of E-Participation In The Local Government In Malaysia: A Case Study At Alor Setar City Council (MBAS) Kedah*. [Unpublished doctoral dissertation]. Universiti Utara Malaysia.
- [27] Khadzali, N. R., & Zan, Z. M. (2018). E-participation: A systematic understanding on public participation in the government in 21st century. *Jurnal Intelek*, 13(2), 29-46.
- [28] Kim, S., Lee, K. H., Hwang, H., & Yoo, S. (2016). Analysis of the factors influencing healthcare professionals' adoption of mobile electronic medical record (EMR) using the unified theory of acceptance and use of technology (UTAUT) in a tertiary hospital. *BMC medical informatics and decision making*, 16(1), 1-12. <https://doi.org/10.1186/s12911-016-0249-8>
- [29] Le Blanc, D. (2020, January). *E-participation: a quick overview of recent qualitative trends*. United Nations Department of Economic and Social Affairs. https://www.un.org/esa/desa/papers/2020/wp163_2020.pdf
- [30] Lee, S., & Kim, J. (2014). Effects of Servicescape on Perceived Service Quality, Satisfaction and Behavioural Outcomes in Public Service Facilities. *Journal of Asian Architecture and Building Engineering*, 13, 125-131. <http://doi.org/10.3130/jaabe.13.125>

- [31]Lee-Geiller, S., & Lee, T. D. (2019). Using government websites to enhance democratic E-governance: A conceptual model for evaluation. *Government Information Quarterly*, 36(2), 208-225. <https://doi.org/10.1016/j.giq.2019.01.003>
- [32]Lim, S. B., & Yigitcanlar, T. (2022). Participatory governance of Smart cities: Insights from e-participation of Putrajaya and Petaling Jaya, Malaysia. *Smart Cities*, 5(1), 71-89. <https://doi.org/10.3390/smartcities5010005>
- [33]Lin, C. H., Shih, H. Y., & Sher, P. J. (2007). Integrating technology readiness into technology acceptance: The TRAM model. *Psychology & Marketing*, 24(7), 641-657. <https://doi.org/10.1002/mar.20177>
- [34]Macintosh, A., & Whyte, A. (2008). Towards an Evaluation Framework for e-Participation. *Transforming Government People Process and Policy*, 2, 3351-33514. <http://doi.org/10.1108/17506160810862928>.
- [35]Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. *All Ireland Journal of Higher Education*, 9(3).
- [36]Makkonen, M., Frank, L., & Koivisto, K. (2017). Age differences in technology readiness and its effects on information system acceptance and use: the case of online electricity services in Finland. In A. Pucihar, M. K. Borštnar, C. Kittl, P. Ravesteijn, R. Clarke, & R. Bons (Eds.), *Bled 2017 : Proceedings of the 30th Bled eConference. Digital Transformation : From Connecting Things to Transforming Our Lives* (pp. 403-420). University of Maribor Press. <https://doi.org/10.18690/978-961-286-043-1>
- [37]MAMPU. (n.d.). MyGovernment Portal. <https://www.malaysia.gov.my/portal/index>
- [38]Manoharan, A. P., & Ingrams, A. (2018). Conceptualizing E-Government from Local Government Perspectives. *State and Local Government Review*, 50(1), 56–66. <http://doi.org/10.1177/0160323X18763964>.
- [39]Mossberger, K., Wu, Y., & Crawford, J. (2013). Connecting citizens and local governments? Social media and interactivity in major US cities. *Government information quarterly*, 30(4), 351-358. <https://doi.org/10.1016/j.giq.2013.05.016>
- [40]Munoz, L. A., & Bolivar, M. P. R. (2019). A Walk for e-Participation in the Smart City's Era. New Organizational Challenges and New Models of Governance. In L. A. Munoz, & M. P. R. Bolivar (Eds.), *Part of the Public Administration and Information Technology book series (PAIT): Vol. 34. E-Participation in Smart Cities: Technologies and Models of Governance for Citizen Engagement* (pp. 205-213). Springer. https://doi.org/10.1007/978-3-319-89474-4_10
- [41]Napitupulu, D., Adiyarta, K., & Albar. (2019). Public Participation Readiness Toward E-Gov 2.0: Lessons from Two Countries. *Proceedings of the 12th International Conference on Theory and Practice of Electronic Governance, USA*, 240-243. <https://doi.org/10.1145/3326365.3326397>
- [42]Naranjo-Zolotov, M., Oliveira, T., & Casteleyn, S. (2019). Citizens' intention to use and recommend e-participation: Drawing upon UTAUT and citizen empowerment. *Information Technology & People*, 32(2), 364-386. <https://doi.org/10.1108/ITP-08-2017-0257>
- [43]Noordin, N. A., & Ngah, K. (2018). Does Social Capital Influence Participation In Planning? Evidence From Subang Jaya, Malaysia. *International Journal of Law, Government and Communication*, 3(8), 32-44.
- [44]Nurudin, S. M., Hashim, R., Rahman, S., Zulkifli, N., Mohamed, A. S. P., & Hamik, S. A. (2015). Public participation process at local government administration: a case study of the Seremban Municipal Council, Malaysia. *Procedia - Social and Behavioral Sciences*, 211, 505-512. <https://doi.org/10.1016/j.sbspro.2015.11.067>
- [45]OECD. (n.d.). *Open Government Data*. OECD Home. <https://www.oecd.org/gov/digital-government/open-government-data.htm>

- [46]Oni, A. A., Oni, S., Mbarika, V., & Ayo, C. K. (2017). Empirical study of user acceptance of online political participation: Integrating civic voluntarism model and theory of reasoned action. *Government Information Quarterly*, 34(2), 317-328. <https://doi.org/10.1016/j.giq.2017.02.003>
- [47]Parasuraman, A. (2000). Technology Readiness Index (TRI) a multiple-item scale to measure readiness to embrace new technologies. *Journal of Service Research*, 2(4), 307-320. <https://doi.org/10.1177/1094670500240>
- [48]Parycek, P., Schossböck, J. & Rinnerbauer, B. (2015). Identification in E-Participation: Between Quality of Identification Data and Participation Threshold. In: E. Tambouris, P. Panagiotopoulos, Ø. Sæbø, K. Tarabanis, M. A. Wimmer, M. Milano, & T. Pardo (Eds.), *Lecture Notes in Computer Science book series (LNISA): Vol. 9249. Electronic Participation* (pp. 108–119). Springer. https://doi.org/10.1007/978-3-319-22500-5_9
- [49]Rahi, S., & Ghani, M. A. (2018). The role of UTAUT, DOI, perceived technology security and game elements in internet banking adoption. *World Journal of Science, Technology and Sustainable Development*, 15(4), 338-356. <https://doi.org/10.1108/WJSTSD-05-2018-0040>
- [50]Rajala, T., & Aaltonen, H. (2020). Reasons for the Failure of Information Technology Projects in the Public Sector. In H. Sullivan, H. Dickinson, & H. Henderson, (Eds.), *The Palgrave Handbook of the Public Servant*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-29980-4_78
- [51]Reddick, C., & F. Norris, D. (2013). E-participation in local governments: An examination of political-managerial support and impacts. *Transforming Government: People, Process and Policy*, 7(4), 453-476. <https://doi.org/10.1108/TG-02-2013-0008>
- [52]Rotta, M. J. R., Sell, D., dos Santos Pacheco, R. C., & Yigitcanlar, T. (2019). Digital commons and citizen coproduction in smart cities: Assessment of Brazilian municipal e-government platforms. *Energies*, 12(14), 2813. <https://doi.org/10.3390/en12142813>
- [53]Sachs, M. & Schossbock, J. (2019). Acceptance of Tools for Electronic Citizen Participation. In P. Panagiotopoulos, N. Edelmann, O. Glassey, G. Misuraca, P. Parycek, T. Lampoltshammer, & B. Re. (Eds.), *Lecture Notes in Computer Science book series (LNISA): Vol. 11686. Electronic Participation* (pp. 35-46). Springer. https://doi.org/10.1007/978-3-030-27397-2_4
- [54]Saebo, Ø., Rose, J., & Flak, L. (2008). The Shape of E-participation: Characterizing an Emerging Research Area. *Government Information Quarterly*, 25(3), 400-428. <http://doi.org/10.1016/j.giq.2007.04.007>
- [55]Salamat, M. A., Shahizan, H., & Syakiran, M. M. (2011). Electronic Participation in Malaysia. *Journal of E-Government Studies and Best Practices*. 1-11. <http://doi.org/10.5171/2011.270543>.
- [56]Samaradiwakara, G. D. M. N., & Gunawardena, C. G. (2014). Comparison of existing technology acceptance theories and models to suggest a well improved theory/model. *International technical sciences journal*, 1(1), 21-36.
- [57]Sivarajah, U., Weerakkody, V., Waller, P., Lee, H., Irani, Z., Choi, Y., & Morgan, R., & Glikman, Y. (2015). The Role of e-Participation and Open Data in Evidence-Based Policy Decision Making in Local Government. *Journal of Organizational Computing and Electronic Commerce*, 26. <http://doi.org/10.1080/10919392.2015.1125171>.
- [58]Troisi, O., Fenza, G., Grimaldi, M., & Loia, F. (2022). Covid-19 sentiments in smart cities: The role of technology anxiety before and during the pandemic. *Computers in Human Behavior*, 126, 106986. <https://doi.org/10.1016/j.chb.2021.106986>
- [59]Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS quarterly*, xiii-xxiii.
- [60]Unified Public Consultation. (n.d.). *Unified Public Consultation*. <https://upc.mpc.gov.my/csp/sys/bi/%25cspapp.bi.index.cls?scnH=714&scnW=1490>

- [61]United Nations. (2022). *UN E-Government Knowledgebase*. <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/103-Malaysia>
- [62]Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, *46*(2), 186-204.
- [63]Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, *27*(3), 425 - 478. <https://doi.org/10.2307/30036540>
- [64]Venkatesh, V., Thong, J., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, *36*(1), 157-178. <https://doi.org/10.2307/41410412>
- [65]Venkatesh, V., Thong, J. Y., Chan, F. K., & Hu, P. J. (2016). Managing citizens' uncertainty in e-government services: The mediating and moderating roles of transparency and trust. *Information Systems Research*, *27*(1), 87-111. <https://doi.org/10.1287/isre.2015.0612>
- [66]Waddington, H., Sonnenfeld, A., Finetti, J., Gaarder, M., John, D., & Stevenson, J. (2019). Citizen engagement in public services in low-and middle-income countries: A mixed-methods systematic review of participation, inclusion, transparency and accountability (PITA) initiatives. *Campbell Systematic Reviews*, *15*(1-2), 1025. <https://doi.org/10.1002/cl2.1025>
- [67]White, J. D. (2007). *Managing information in the public sector*. New York: M.E. Sharpe.
- [68]Wimmer, M. A. (2007). Ontology for an e-participation virtual resource centre. *Proceedings of the 1st international conference on Theory and practice of electronic governance (ICEGOV '07)*, 89-98. <https://doi.org/10.1145/1328057.1328079>
- [69]Wirtz, B. W., Daiser, P., & Binkowska, B. (2018). E-participation: A strategic framework. *International Journal of Public Administration*, *41*(1), 1-12. <https://doi.org/10.1080/01900692.2016.1242620>