Exploring Factors Affecting Citizens' Acceptance to Use E-Participation in Malaysian Local Governments Through an Extended UTAUT Model

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Abstract: E-participation platforms in local government are now recognized as a digitalization strategy for enriching the democratization culture in citizen-government relations, especially at the grassroots level. This article explores the current understanding of the relationship between Malaysian citizens' acceptance and use of e-participation platforms provided by their respective local governments, which also will oversee the moderating effect analysis of demographics. This study framework integrates with slight extensions to the original Unified Theory of Acceptance and Use of Technology (UTAUT) model. The study uses a quantitative methodology involving a survey questionnaire with convenience sampling applied to respondents comprised of 484 local Malaysian citizens via offline and online methods. IBM SPSS Statistics Version 27 software will be used for data analysis, comprising Pearson Correlation for correlation analysis and structural equation modeling analysis via SmartPLS 3.0 software for moderating effect analysis. The findings show that all citizens' acceptance factors correlate with using e-participation. In the meantime, all 20 demographics' moderating effects were tested, but no significant relationship was found. This study is significant in that it revisits several relevant literature reviews to enrich the development of the research framework and provide a necessary foundation for understanding the use of e-participation within Malaysian local governments.

Keywords: Citizens' acceptance, Public participation, E-participation, Malaysian local governments, UTAUT

1. INTRODUCTION

Since they are the prominent administrators of local and regional settings, local governments possess a long tradition of fostering economic, social, and living sustainably in their areas and neighboring communities [1] [2] [3] [4]. For instance, because of the relatively fundamental nature of local governmental interactions, local governments in the United States have always been at the forefront of e-government application execution in micro-level regions [5]. In order to provide high-quality local government services while reducing red tape agencies, local governments have benefited tremendously from increased participation from the public, comprehensive observation, and open acceptance of all ideas and perspectives via e-participation approaches [6]. Since the local government is uniquely positioned to use e-participation to determine and address the requirements of its constituents because of its proximity to those it serves [1] [3]. When considering implementing e-participation, local governments should consult the public for advice since, in today's digital environments, most local governments worldwide are pursuing digitalization and innovations [7].

Referring to goal 16th of the United Nations Sustainable Development Goals (SDGs), "peace, justice, and strong institutions," shows how digital government systems are directly relevant today. In the context of digital governance, this may be accomplished by creating a government that is more accessible, user-friendly, and accountable to its constituents, as well as one that actively pursues transparency [4]. Implementing extensive public participation, detailed monitoring, and universal acceptance of all stakeholders' opinions may make public sector organizations more efficient and better prepared to
offer high-quality government services [6]. This notion returns to the primary contention that individuals should be granted access to and use certain government-related information or publicly available sources to participate in policymaking and hold governments accountable. Nonetheless, this is only possible with adequate technological backing since this essentially allows for building record registries that can be accessed from anywhere at any time [8].

In the context of virtual participatory and consultative practices, the term "e-participation" refers to the use of modern digital technology to increase and revolutionize people's participation [9] [10]. Citizens are encouraged to actively deliver various public services using e-participation tools, and governments can connect with their citizens more efficiently. People's interests and preferences will be considered when making policy decisions if the government is better prepared to ask for, collect, and consider the opinions of its residents. E-participation also encompasses digital technology, which may inspire people to participate in online activities once they can [11] [12]. Online discussion groups, electronic voting, virtual communities, and web forums, decision-making exercises, social networking, and tools for general recommendation are all examples of digital-enabled strategies for e-participation.

In 1996, the government of Malaysia launched the Malaysian Electronic Government (EG) program through the Multimedia Super Corridor (MSC) as one of many MSC projects to propel Malaysia to the pioneering of the digital era and connect Malaysia with other "smart cities" around the world [13]. In that same year, the MSC unveiled seven flagship programs, one of which was Malaysia's extensive suite of online administrative functions. The primary goal is to make government agencies more effective in providing services via digital means [13]. It was also hoped that people would have a more straightforward experience using the internet to find the information they needed from the respective government agencies. The Malaysian Administrative Modernisation and Management Planning Unit (MAMPU), an agency assigned to long-term policymaking, technological innovation, and public administrative tasks, was created in line with the country's e-government effort [4].

E-government in Malaysia relies heavily on the modernization of government services provided to citizens and businesses. Malaysia's development and governance at all levels have been influenced by e-government. As a result of these developments in Malaysian e-government services, it will be crucial for local governments in Malaysia to create and introduce a comprehensive benefit for a long-term e-participation practice [14]. Furthermore, the "Movement Control Orders" (MCO) during the previous COVID-19 outbreaks in Malaysia have been issued to limit travel to many between nations, states, and districts. Since then, the government of Malaysia has created an extensive plan for speeding up the digitalization of its people, including measures to increase the acceptance of online services and e-commerce [15]. However, a thorough understanding of citizens' acceptance of digital technologies is essential before the government can go digital with its services [16].

This study focused on the locals and users of local government services in a random subset of Malaysia. After carefully examining the agency's working methods and the development of its e-participation, we were able to draw specific findings regarding the organization's functioning. Local government agencies should seriously accept best practices to establish positive relationships with the needs of the community and set the conditions to ramp up the use of e-participation from the local community, which would inspire both parties to provide more ideas and proposals that would improve good and inclusive local community environment, the efficiency of work operations in agencies, and the standard of local government services. Given this situation, we investigated measures to enhance the local government agencies' practices regarding e-participation, particularly concerning citizens' acceptance. Citizens' acceptance can be described as the measure to which locals of a particular area readily embrace and use an extensive range of different types of technology.

The first objective of this paper is to analyze the citizens' acceptance and the use of e-participation within the scope of local government organizations in Malaysia. At the same time, the research's second objective of this paper is to examine the demographic variables (gender, age, education level, and technology experience) to moderate the relationship between citizens' acceptance and the use of e-participation.

2. LITERATURE REVIEWS

A. Malaysian Local Government

In Malaysian general terms, Pihak Berkuasa Tempatan (PBT) or Kerajaan Tempatan (KT) represents the name for Malaysia's local government, the third layer of government after the federal and state government levels [17][18]. Based on Malaysia's Federal Constitution since 1957, federal and state governments have power over local governments. The federal government can establish legislation to ensure all states adhere to the same policies and laws. However, the Constitution's Clause 76 (4) makes it clear that the states have exclusive authority over local government matters [19]. That is to say, except...
for the Federal territory, whose concerns are handled by the minister responsible for the Ministry of Local Government Development, the federal government, and the state must mandate that all local governments establish and carry out policies and objectives [17].

Fig. 1 depicts the power distribution between the federal government, the states, and local governments, offering a glimpse into the Malaysian Federal Constitution’s 1975 framework for governing authority. This connection demonstrates the central government’s jurisdiction over the councils’ sub-national bodies. The federal government may provide recommendations, offer additional technical assistance, and maintain administrative changes. It is common for the federal government to collaborate with the states in policymaking for local government [17].

Currently, all local governments in Malaysia are subordinate to their one state government [20]. Department of Local Government or Jabatan Kerajaan Tempatan (JKT), assists the Malaysian Ministry of Housing and Local Government Development or Kementerian Pembangunan Kerajaan Tempatan Malaysia (KPKT) in managing all of Malaysia’s local governments by centralizing laws and policies, providing consulting services (including technical advice services), and distributing federal government funds. City Councils or City Halls, Municipal Councils, and District Councils make up the three local government categories in Malaysia, as specified by the [20]. As shown in Table I below, there are a variety of local government categories in Malaysia.

### TABLE I. TYPES OF MALAYSIAN LOCAL GOVERNMENTS AND ITS CRITERIA

<table>
<thead>
<tr>
<th>Types of Local Government</th>
<th>Criteria</th>
</tr>
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<tbody>
<tr>
<td>City Council / City Hall</td>
<td>A City Council/City Hall is a local government agency that is upgraded to a city after meeting the criteria of having a population of not less than 500,000 people and the annual revenue of the local authority must exceed RM100 million.</td>
</tr>
<tr>
<td>Municipal Council</td>
<td>The Municipal Council is more focused on the city (urban) when compared to the District Council and has more population and revenue than the District Council. The criteria for the Municipal Council are a total population of more than 150,000 people and an annual revenue of more than RM20 million.</td>
</tr>
<tr>
<td>District Council</td>
<td>The District Council is more focused on the countryside (rural-based). The criteria for a District Council are that the total population is less than 150,000 people and the annual revenue is less than 20 million.</td>
</tr>
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</table>

Source: [20]

**B. Public Participation in Malaysian Local Governments**

In this study, the term "public participation" describes the efforts made by local governments in Malaysia to give more citizens the opportunity in policymaking by providing them with more open and accessible forums for doing so [21]. Subsections 9 (1) (2), 12A and 13, and 16B (3) of the Town and Country Planning Act of 1976 (Act 172), according to [22], all endorse the idea of public participation for local government. Regional local development plans (Structure Plan or Rancangan Struktur - RS, Local Plan or Rancangan Tempatan - RT, and Special Area Plan or Rancangan Kawasan Khas - RKK) were made with public input owing to Act 172 [22]. Likewise, Act 172 requires community feedback across the entire planning process for RS, RT, and RKK. This is necessary for the State Authority and the Local Authority to approve the plans [22].

According to [23], Act 172 requires the public presentation of papers and proposals for public discourse and evaluation. The National Physical Plan (NPP), State Structure Plan (SSP), and local district plans are all included throughout the feedback and criticisms. Since local plans typically include specific sections of public property, they may be the greatest venue for meaningful public input at the ground level. High frequency and usage are enforced within the local plan level, which differs from the federal and state levels, where vital policy actions are more likely to be adopted.

Once again, city councils, municipal councils, and district councils are Malaysia’s primary tiers of local government. As mentioned earlier, each local government level has created its strategy for future development based on the federal government’s principles and procedures. As a component of the regional development plan in Malaysia, the Department of Town and Urban Planning or Jabatan Perancangan Bandar dan Desa (JPBD) set up a
public participation mechanism called 'Publicity' (SERANTA), which further entails a public exhibition method in which citizens get the opportunity to voice one's personal views to the local government officials [21].

Later, the SERANTA was transformed into digitalized access to simplify and increase public participation in local and regional plans in Malaysia. For instance, the Seramta Awaam Atas Talian program is one of the government's initiatives to provide space and encouragement to the public to express their views and feedback on all drafts of new proposals or amendments to laws (including by-laws, policies, regulations, and others), regardless of whether the new proposal or amendment needs to be presented in Parliament or not [24].

C. Issues on Public Participation in The Malaysian Local Governments

Almost every Malaysia's local government has adopted public participation systems to gather community input on local plans and policies in the light of Act 172's mandate. Although public feedback has helped many Malaysian municipalities improve their Local Draft Plans, results have conflicted. One such study was established by [23], who discovered that the public participation research for Kuala Lumpur's Draft City Plan 2020, which began in the year of 2008, reveals an optimistic level of local participation and that the length of collection of data was expanded in response to the people's optimism to participate. After three and a half years, the number of intended responders significantly exceeds the number of intended responders.

Again, [23] argued there had been some significant insufficient public participation within particular local government organizations in Malaysia because, based on their survey received just a few hundred replies, which was much lower than that of other local municipalities in Malaysia. At the same time, some scholars have shown that the level of public participation in most of the Malaysian local governments is often within the low to medium level only, based on the studies by [25][26][27].

This is consistent with the study by [21], who discovered that mostly just 1% of respondents followed the public participation process in completing the form complaints within their local government public participation campaign. This is supported by PLANMalaysia's (the Federal Department of Town and Country Planning) 2006 Annual Report, which reflects the claim made by [21]. Only 1-12% of the population in each district location visited the local government's displays of the proposal and local development plans process. In a related study; for instance, [21] found that in the case of Kuala Langat District Council's local plan was implemented just using a top-down strategic plan alone, with input emanating only from the local government and the residents/community just having followed along.

While according to [21], they argue that the low participation proportion of Malaysian citizens in public participation activities is related to insufficient awareness of information about the process, current challenges, and legislation affecting the planning. Findings by [22] corroborates this by adding that communities must know their rights to make the most of the local government's policy initiatives. As a rule, this happens when the general public needs clarification about the intentions of the development project. Almost everyone knows they have the legal right to voice opposition to a construction project if it is planned for or located close to their home or another site of personal significance.

The next issue is a technique that may need more feedback from the public. Citizens need to get more chances to provide feedback to their administration. The number of people who attend public discussions and gatherings could be small if they are not well advertised. For instance, [26] studied public participation among Seremban Municipal Council citizens relating to the public participation. They discovered that most of those surveyed had an in-depth understanding of participating in Seremban Municipal Council-sponsored activities like the "gotong-royong" or collaborative work program. At the same time, a smaller subset had taken steps to seek out and participate in discussion and debate sessions with the council. It was discovered, however, that the Seremban Municipal Council needed help getting information out to the public about the public participation events it was planning. In certain instances, people need more awareness about a program because, in their view, the local government needs to do more to spread information about it.

In the research on local planning in general, some technical issues, like how well participation by the public can be organized, have been pointed out as problems. Considering [28] analysis of Malaysia's smart cities program from the perspective of the country's local governments. [28] argues that the Petaling Jaya City Council's current local planned development, which has been incorporated within the Smart Selangor Blueprint, is getting into stuggled attempting to organize the public's participation in the new smart city and LA21 initiatives, both of which originated as ideas of twenty years ago. Most local governments in Malaysia need help making progress on citizen-centric urban planning due to the absence of local environmental standards for implementing public participation and the efforts to integrate more peoples responsibilities [28].

Disengagement problems are the most serious because they make people skeptical of their local government operation and less likely to get attached to its day-to-day activities. Local governments could address these

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problems in several ways, including targeted good communication and using numerous alternatives of active participation (for instance, social media and virtual community forums). It is also crucial for local governments to be readily available and open to public feedback in order to guarantee the effectiveness of the smart cities' execution plan. As a result, strengthening the functioning of municipal administrations can build confidence and promote ongoing participation by the public [28].

The local community in Malaysia still appears to lack sufficient awareness of the public participation process, issues, and planning regulations, which may explain why the number of public participants in local government is still low [21][29]. From [22] results, which emphasize the significance of local voter awareness of their rights and benefits in policy efforts undertaken by local government agencies, are consistent with these findings. Usually, this occurs because the general population needs to be made aware of or confused about the current local government development plans. If a project is being created close to someone's house or in an area of interest to them, most people will be aware of their right to protest and voice their views. In Malaysia, for instance, the local governments are responsible for opening public area initiatives such as creating a public park. However, there are no indications of evidence for ongoing public participation in the execution via the SERANTA platform throughout the landscape departments responsible for this activity [30]. This is because local citizens need to be made aware of what public participation process can be done to provide their input to their designated local governments [21][26][29].

D. Definitions on E-Participation

Due to rapid innovation, today’s public administration academics have actively discussed e-participation practices [31]. To begin, [32] saw e-participation for ICT technology used in data supply as "top-down engagement" and "bottom-up efforts" to encourage individuals, civic groups, and possibly other politically established organizations to benefit from their elected leaders. Meanwhile, [33] states that e-participation uses digital means to improve citizen-government dialogue on particular policy issues. From the definition by [9], E-participation includes actively using digital technologies to address community issues or policy efforts. In addition, [34] described e-participation as one of the e-government programs that allow individuals to share their opinions on policy initiatives and develop inclusive online communities.

Moreover, [35] defined e-participation as enhanced technology-based participation in a digital society. E-participation needs connectivity to the internet and other online resources. This study describes e-participation as online venues where local communities can participate in government decision-making. While [36] expanded e-participation terms to digital participation, making them more widely used. [36] believes that digital participation is more interconnected. Digital participation systems may use several new technologies like private social networking to enable flexible and effective interactions between the government and the local community (for instance, Facebook, Twitter, YouTube, mobile applications, and others). Finally, according to the United Nations' E-Government Survey 2020, "e-participation" is defined as "the process of involving individuals via ICT in policy, decision-making, and service design and delivery to make it participatory, inclusive, and deliberative" [37].

E. E-Participation Performance for Malaysia

The study evaluated the current state of e-participation in Malaysia by referencing the United Nations' E-Participation Index reports published once every two years. The United Nations E-Participation Index is an established measure for assessing the success of government platforms in participating citizens in decision-making, monitoring, and sharing information and ideas via digital platforms [38]. The measure considers how well the public has access to information, how actively they are involved in shaping public policy, and how much impact they have on decision-making via digital [38].

The latest United Nations report on the E-Participation Index for 2022 was analyzed for the study. Fig. 2 shows that despite Malaysia’s rising position on the E-Participation Index between 2014 and 2020, there has yet to be a confirmation that the country’s e-participation performance within e-government initiatives is adequate. After 2020, Malaysia’s position and overall worth on the E-Participation Index began to decline. The value of Malaysia’s E-Participation Index declined drastically, from 0.8571 in 2020 to 0.6818 in 2022, dropping the country from 29th in 2020 to 47th in 2022. This is a vast and severe decrease across the board, and further assessment needs to be undertaken to solve this severe decline trend.

![E-Participation Index for Malaysia](http://journals.uob.edu.bh)
F. Issues in Citizens' Acceptance to Use E-PARTICIPATION in Malaysian Local Governments

[39] claims that the Malaysian government is dedicated to increasing its use of digital channels to encourage citizen input and facilitate effortless e-participation across all levels of government. However, several specifically chosen studies have revealed a wide range of issues with Malaysia’s e-participation program, particularly at the state and local levels of government. For instance, [40] argues that Malaysian citizens could benefit from increased training and education in using e-government tools for public participation. However, because of the absence of appropriate e-participation approaches, especially in local government, the opinions of the public through a 'bottom-up' strategy to their local government continue to require a more significant impact, especially for local planning and decision-making process [21][41][40].

For Malaysia’s e-participation plan for local government to be effective, more research into the relationship between public acceptance and the use of e-participation is required [41][42][40]. Inadequate and lacking academic research on e-participation in local government may also explain the possible exceptional difficulty in developing structured e-participation efforts in Malaysian local governments [40]. Considering the recent international focus on more modern technological solutions to this problem, traditional public participation methods must be reconsidered.

The results found by [21] highlight the necessity of expanding and modernizing existing research on e-participation. This is because modern research has mostly ignored local and county governments in favor of the federal and state levels of government [21]. Additionally, as [21] noted, there needs to be a better two-way dialogue between the local government and its people, particularly concerning the thoroughness of local planning and decision-making. [39] argues that the technological gap in Malaysia is worsening, especially in rural and remote regions, which renders it difficult for citizens to get involved with far-away town hall discussion sessions online, despite the government’s recent substantial digitalization initiatives, such as Jalinan Digital Negara (JENDELA), the National Faserisation and Connectivity Plan (NFCP) 2019-2023 program, and the deployment of 5G networks.

According to a report published by the [43] in Malaysia, although numerous government organizations in Malaysia acquire and produce a massive quantity of information through online platforms such as social media, there is still room for improvement in the way that people use this information. For instance, a study conducted in 2010 on 109 local government organizations in Malaysia revealed that 64.2% of the entire local government organization still relies on a website that has yet to be continually served with the most recent local information. In addition, according to the same survey, only 10% of Malaysian local governments make their budgets and other financial statistics accessible to the public online. This demonstrates that many open government guidelines require further comprehensive implementation at Malaysia’s local government level.

The decline in the Online Service Index (OSI), one of the three components that make up the United Nations E-Government Development Index (EGDI), could be a consequence of this problem [4]. The goal of the policy structure known as "open government data" is to increase government openness, responsibility, and value creation by making more government information available to the public [16]. Numerous large datasets and information resources are created or commissioned by government organizations. Government organizations can gain the trust of their citizens by making their information available online around all hours of the day [4]. There will be more business owners and new services that accommodate the needs of people if governments make it simple to use, repurpose, and exchange information for no cost. In 2020, the EGDI, as measured by OSI in Malaysia, was 0.8529; by 2022, it had dropped to 0.7630. This means that there is a demand for growth in the way that public organizations share knowledge with citizens in Malaysia. The OSI is an international initiative to standardize metrics for assessing how effectively governments freely handle their citizens' access to and use of publicly available information.

All levels of government in Malaysia rely on information and data that they receive, gather, and use to carry out their duties [43]. However, there is a need for more effective local government-wide data exchange and knowledge administration tools. As a result, the capacity of the local government to provide essential services is constrained. Research conducted by MAMPU in 2010 found that all local government entities should use the same centralized data administration or sharing system. More data and information exchange within and between Malaysia’s local government agencies could have far-reaching benefits [44]. The Malaysian local governments may need to implement new procedures for sharing data and information to deal with these problems [45]. Data-sharing commitments, improved public participation through the application of targeted digital tools, the creation of standardized data forms, and the provision of resources for innovative technological and physical developments are all possible outcomes of such efforts [44][45]. Instilling a sense of trust and regard among local government organizations may prompt them to cooperate for the greater good.

Enhanced technical capacities, sufficient facilitating situations, constant operation maintenance, and similar factors could propel e-participation to the next level. To
facilitate e-participation, local governments in low internet connectivity regions may need supplementary resources, including computers, internet access, software, personnel, and information. Therefore, we need to rethink our digital efforts to boost public participation throughout the local government. For better public services and administration, the local government in Malaysia requires more digital infrastructure [46]. More accessible and valuable tools for organizing local government committee activities may encourage greater participation from individuals and organizations. Imagine that the local government's technical software and hardware are widely criticized and ignored. If the technology is less user-friendly and fails to enhance e-participation, then providing it to the citizens is meaningless [4].

Another example of a citizens' acceptance issue case study, such as in the study of [46], in their analysis of local government in Putrajaya and Petaling Jaya, found five main challenges that might emerge from restricted digital communications. The local government could use modern technology to eliminate inefficient and unnecessary procedures. This could cause delays in service supply and additional resource consumption. Second, there is restricted access to statistics from local governments. Local government officials may need assistance acquiring and sharing vital data due to constraints in digital infrastructure. Because of this, practical, all-encompassing lines of dialogue and decision-making may need to be improved. Thirdly, there need to be more lines of communication. Only with sufficient digital networks can ensure local governments rely on open dialogue with their citizens. It could be more challenging for government workers at the local level to engage with citizens. Furthermore, adequate digital infrastructure is required to promote public participation in local government. If citizens cannot communicate or gain access to local government services, they may become disinterested and distrustful. Cybersecurity flaws pose an additional risk for e-participation implementation in Malaysia. Important and confidential government data can be compromized in local government organizations with inadequate digital infrastructure, particularly in cybersecurity settings.

G. Unified Theory of Acceptance and Use of Technology (UTAUT) Model

With users' acceptance and support, the technology can be successfully implemented [47]. Users have claimed they "accept" new technologies when they begin using them without trouble [47]. Therefore, it is necessary to investigate applicable theories or models to develop a proposed research framework for studying the development of e-participation in research. According to [47], they recommended that if numerous hypotheses or models are compatible with the study, scholars can determine which of them to implement.

This study employs a popular technological acceptance framework from [47], that is, Unified Theory of Acceptance and Use of Technology (UTAUT) model. The UTAUT theoretical foundation will be used to determine what variables significantly impact the acceptance of e-participation among the people of local governments in Malaysia. To synthesize and incorporate preexisting theory models, [47] created the UTAUT model (see Fig. 3 below). The UTAUT model incorporates extensive prior research and theory [47]. Performance expectancy, effort expectancy, and social influence are the three key components of the UTAUT that affect behavioral intention to use technology. The facilitating conditions and behavioral intentions, respectively, may influence usage behaviors. The model also considers the four moderating variables of gender, age, experience, and voluntariness of use.

![Unified Theory of Acceptance and Use of Technology (UTAUT) Model. [47]](http://journals.uob.edu.bh)

H. Research Framework

The proposed research framework is stimulated by the UTAUT, which will serve as a base for creating citizens' acceptance variables. However, a slight modification will be made to the original UTAUT to ensure its suitability for this specific type of study. The UTAUT is the convergence of several preceding technology acceptance theories and models, including those created by [47]. Although UTAUT is mostly verified and well-adapted, a few issues have been discovered via previous research, as stated by [48]. This suggests it may be possible to undertake comprehensive association analyses, particularly in e-participation, by matching the links revealed in UTAUT using extra or external factors. It is also recommended that the UTAUT be used with other research moderating dimensions, such as age, gender, experience, and use, to ensure further the study's suitability in question [49].

For instance, [50] and [48] used the same four moderator variables as the original UTAUT but replaced
them with new ones. Previous studies missed moderators because the moderator is sometimes comparable across acceptance and use conditions [48]. For instance, an organization may have demanded that all employees use a specific suite of digital tools [48]. Thus, gender, age, experience, and voluntariness as a moderator may be irrelevant in some study inquiries [48]. Nonetheless, the original voluntariness of use is deleted and replaced with one new demographics moderator variable, such as education level, to optimize the holistic demographics perspective in this study. Fig. 4 shows the research framework that will be used in this study.

![Research framework of this study.](image)

1) Citizens' Acceptance (Independent Variable)

This study takes a comprehensive look at the occurrence to determine the extent to which people are interested in becoming involved in e-participation. We are concerned about how Malaysian citizens tend to believe that a manageable number of determined variables influence e-participation. The initial UTAUT model's variables, as well as the researcher-created variable "awareness of the system," include "performance expectancy," "effort expectancy," "social influence," and "facilitating conditions."

a) Awareness of the System: The likelihood of someone adopting new technologies depends on the importance they place on beliefs and principles. Knowing about e-participation methods can help people form personal opinions about using them. For a broader and more varied group of participants and organizations across all sectors to participate in the digital system, it is common practice to begin with, digital tools intended to discuss the initiative and gather contributions [51]. However, in the early stages of e-participation adoption, personal interaction is less successful than mass media sources in creating knowledge of the system [52]. The issue with e-participation is that numerous individuals still have to learn about the public participation process and the various forms of participation they can participate in [53].

According to [2], indicates from his study that most contemporary Malaysians still need to gain adequate awareness of the function of their local government. How best to disseminate awareness concerning this e-participation platform for public feedback is an important issue in Malaysia, where many residents still have questions about the function of their local government. Getting information about a single online platform for local government relations with its citizens is vital. The digital gap, insufficient access to suitable technology, and a failure to utilize government-provided e-participation services are just a few reasons why [39] and [26] discovered that the digital empowerment of Malaysian people remains required to be enhanced. In addition, Malaysians must thoroughly understand the particulars of their rights and benefits concerning the policy initiatives made by local government organizations [22]. From [54] research are one example of an attempt to combine the different awareness of the system alongside the original UTAUT to examine the amount of user awareness and understanding concerning the context of using a digital platform.

b) Performance Expectancy: According to the UTAUT, an individual's perception of technology is highly affected by their expectation of how effectively it will perform [55] [56]. The degree to which a user expects that implementing new technology will help them achieve their goals and improve their performance in the workplace is known as their performance expectancy [47]. The word "performance expectancy," as employed in the study by [56], can be described as the degree to which an individual predicts benefiting personally or socially from engaging in online activities. Since officials in municipalities expect greater efficiency due to citizens' more active participation, they prioritize concrete results [56]. E-participation can inspire individuals to increase their achievement and commitment to society significantly [56].

c) Effort Expectancy: A user's "effort expectancy" refers to the degree to which they perceive minor difficulties or effort when engaging with a specific piece of technology [47] [49]. These features are often used to indicate familiarity and engagement with digital media. People of all ages and backgrounds can and should take advantage of the opportunities the online world presents when the digital platform is easy to use. Given the optional nature of online participation, it is crucial to recognize that users may emphasize the community more than themselves. However, at the level of society, the
apparent effort needed to deal with e-participation may impact individuals' willingness to participate. A significant obstacle to effective e-participation practices, especially in local government, was people's needing more digital expertise [56]. Many people have a sense that e-participation tools are complicated to learn how to use. This implies that if individuals have problems with e-participation, they are less predicted to use it.

d) Social Influence: Prior studies examining how people's attitudes toward e-participation services have changed given considerable weight to the impact of societal norms and values on people's perspectives [55]. When people exclaim about their "social influence," they usually mean they significantly impact the decisions of those closest to them [47] [49]. Political activists and influential people with a solid online presence could impact people's time in the virtual world [57]. If early adopters find the helpful technology, their friends and family are likelier to adopt e-participation.

e) Facilitating Conditions: To what degree does the user believe the organization has provided them with the equipment and help they need to make optimal use of the technology is what we mean by "facilitating conditions" [47] [49]. The research by [56] found that local government organizations are the leading suppliers and advocates of e-participation. Those with more convenient access to media technologies like laptops and cell phones are likelier to be involved in online groups through message forums and social media. It is possible that people's opportunities for digital participation would appear to be quite varied in a world where access to technology differs significantly, and digital disparities remain [58] [39] [49]. It takes more work on their part to participate in an online community, make a recommendation, or pitch a project proposal online.

There must be a more significant correlation between technological advances and the adoption of digital resources for cooperation and other reasons, even though more effort is being made towards digitalizing communities [56]. For example, in the case of the local government in Ghana country, which currently is evidence that user acceptance and the use of digital tools, especially in the context of public policy-making in Ghana's local government, have a positive impact on e-participation, even though a relatively small usage due to technological issues, most notably technical limits [59]. These findings are consistent with those of [60], who conducted a literature survey on the study of e-participation and found that citizens need to make full use of the software tools made available to them by their governments. People in remote areas of Malaysia are less equipped than those in metropolitan areas due to a lack of access to and a disparity in the quality of digital tools [39].

2) Use Of E-Participation (Dependent Variable)

This study will employ UTAUT's "use behavior" as the dependent variable for the use of "e-participation." The findings highlight crucial aspects that affect e-participation use, although it probably did not address the user's outcome. [61] evaluated public agency social media use to improve service and participation. They found that environmental, technological, and creative elements help public agencies succeed. Social media usage is correlated with positive outcomes such as increased public gratification and confidence in the government in e-participation [62]. At the same time, [63] revealed that e-participation becomes unlikely when trust is diminished.

3) Demographics (Moderating Variable)

Quantitative research will be used in this study. In this quantitative-based study, primarily surveys, also evaluates gender, age, education level, and technology experience for the use of e-participation.

I. Research Hypotheses

1) H1: There is a significant relationship between the awareness of the system and use of e-participation.

a) H1a: Gender moderates the relationship between the awareness of the system and use of e-participation.

b) H1b: Age moderates the relationship between the awareness of the system and use of e-participation.

c) H1c: Education level moderates the relationship between the awareness of the system and use of e-participation.

d) H1d: Technology experience moderates the relationship between the awareness of the system and use of e-participation.

2) H2: There is a significant relationship between the performance expectancy and use of e-participation.

a) H2a: Gender moderates the relationship between the performance expectancy and use of e-participation.

b) H2b: Age moderates the relationship between the performance expectancy and use of e-participation.

c) H2c: Education level moderates the relationship between the performance expectancy and use of e-participation.

d) H2d: Technology experience moderates the relationship between the performance expectancy and use of e-participation.

3) H3: There is a significant relationship between the effort expectancy and use of e-participation.

a) H3a: Gender moderates the relationship between the effort expectancy and use of e-participation.
b) $H_3b$: Age moderates the relationship between the effort expectancy and use of e-participation.

c) $H_3c$: Education level moderates the relationship between the effort expectancy and use of e-participation.

d) $H_3d$: Technology experience moderates the relationship between the effort expectancy and use of e-participation.

4) $H_4$: There is a significant relationship between the social influence and use of e-participation.

a) $H_{4a}$: Gender moderates the relationship between the social influence and use of e-participation.

b) $H_{4b}$: Age moderates the relationship between the social influence and use of e-participation.

c) $H_{4c}$: Education level moderates the relationship between the social influence and use of e-participation.

d) $H_{4d}$: Technology experience moderates the relationship between the social influence and use of e-participation.

5) $H_5$: There is a significant relationship between the facilitating conditions and use of e-participation.

a) $H_{5a}$: Gender moderates the relationship between the facilitating conditions and use of e-participation.

b) $H_{5b}$: Age moderates the relationship between the facilitating conditions and use of e-participation.

c) $H_{5c}$: Education level moderates the relationship between the facilitating conditions and use of e-participation.

d) $H_{5d}$: Technology experience moderates the relationship between the facilitating conditions and use of e-participation.

3. METHODS

A. Study’s Method, Population, Sampling, and Data Collection

We use a quantitative study method to explore participants' expectations regarding various aspects of acceptance to use e-participation in Malaysian local governments. User acceptance and e-participation usage research in Malaysian local governments draw on actual-life scenarios and citizen feedback. This study's factors were validated using an extended version of the UTAUT model, as shown in Fig. 4 of the research framework discussed previously.

The survey's study group will be comprised of Malaysian citizens, with data collected from a sample chosen to be representative of a wide variety of demographic and social factors. Because of the massive size of the Malaysian population (over 30.2 million people), we limited the population studied to local citizen adults in Malaysia who had reached the age of at least 18 when the study was performed. Thus, by the end of 2022, it is projected that the final sample group used in this study will number anywhere in the surrounding area of 21,170,614 people, representing the total number of local Malaysian citizens aged 18 and over who were registered to vote for the 15th Malaysian General Election (PRU-15) in 19th November 2022.

This is because, by the moment they reach adulthood, members of this age group are more likely to have worked for and interacted with local government agencies, especially in regards to submitting complaints making certain payments, and giving opinions on decision-making processes [64] [46]. In addition, people aged 18 or older were found to have the highest probability of using e-participation channels in Malaysian public services that are online to communicate with government agencies, probably because of the necessity of doing so in their present occupation [41]. Several literature studies on sample size determination guidelines were reviewed to acquire a sample representative of the Malaysian community. These included the formula provided by [65] and [66], and others.

It has been determined that a sample size of 400 is sufficient using the calculation method developed by [65]. In addition, a sample size of at least 384 Malaysian citizens is required to accurately reflect a community of 100,000 or more, as determined by the [66] sample size determination (approximately 21,170,614 people). There is a difference of 16 responses between the sample size suggestions made by [65] and those made by [66].

The recommended minimum number of samples for a quantitative study is 300, with 500 being adequate and 1000 being excellent [67]. In order to apply the results of a quantitative study to the whole nation, a sample size of at least 300 people is required [68] [69]. When conducting quantitative research, it is recommended that the sample number be increased from 300 to improve the reliability of the findings [68] [69]. Taking into account Slovin's and Krejcie & Morgan's number of samples formulas as well as numerous studies of the literature on sample size determination, this study will aim for 500-1000 samples due to the study's limitations, which include the expenses related to collecting data, the limited time available for expanded collection of data, the difficulty for researchers collecting additional information throughout an extensive geographical area, and the massive sample size of Malaysian citizens, which approximately around 21,170,614 peoples.

The convenience sampling method was used to pick participants based on their availability, determination, and motivation to get involved in the study. Given the high population density in Malaysia and the nation so geographically dispersed, we required extensive time and effort to gather a group that appropriately represented the community. [55] and [70] suggest convenience sampling when time and resources are limited.
Respondents respond by selecting their own corresponding choices when filling out this self-administered survey. Because questionnaires can be administered either offline or online, the study can reach a broader range of people and places at a lower expense and with less administrative complexity [55]. Then the data variables were examined and arranged for statistical analysis from this self-administered survey. This is useful when the sample group is large and challenging to reach; approaching them poses some difficulties for a researcher [55][71][70].

B. Instruments and Measurement

This study will examine instruments using [55], [56], and researcher self-modification. The instruments created by [55], which offer a comparative evaluation of user adoption of government-supplied digital technology, can be helpful when conducting this study. While in the e-participation research carried out by [56] was also used by researchers, [55] and [56] employ the same UTAUT model in their studies. Consequently, the UTAUT model and its instruments have been used to form one of the fundamental frameworks for analysis in this study.

All the question items will be assessed via Likert scale; that is, strongly disagree; disagree; neutral; agree; and strongly agree which created via Likert scale. Likert scale will be used for this study due to its ease of use and management and its capacity to quantify people's views about the relevant variables [72]. This section of the questionnaire will include five independent variables: awareness of the system (consisting of three items), performance expectancy (consisting of five items), effort expectancy (consisting of five items), social influence (consisting of four items), facilitating conditions (consisting of eight items), and the dependent variable to the use of e-participation (consisting of seven items). Table II provides a listing of survey constructs and items.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Items</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness of the System</td>
<td>1. I am aware the existence of e-participation in local government.</td>
<td>[55]; Researchers.</td>
</tr>
<tr>
<td>Performance Expectancy</td>
<td>1. E-participation can save my time.</td>
<td>[56]; [49]; Researchers.</td>
</tr>
<tr>
<td></td>
<td>2. E-participation encourages my participation in every local government program.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. E-participation allows me to provide relevant feedback to local government.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. E-participation help speed up the working process in local government.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. E-participation ensuring a more transparent decision-making process in local government.</td>
<td></td>
</tr>
</tbody>
</table>

### TABLE II. SURVEY’S CONSTRUCTS AND ITEMS.

| Effort Expectancy | 1. E-participation in local government is easily accessible (e.g., server loading). | [56]; [49]; Researchers. |
| | 2. E-participation in local government has clear usage instructions. | |
| | 3. E-participation in local government has a simple and easy participation process. | |
| | 4. E-participation in local government is easy to be uploaded with any relevant information or document. | |
| | 5. Feedback through e-participation in local government is fast. | |
| Social Influence | 1. Family members can influence me in using e-participation. | [56]; [49]; Researchers. |
| | 2. Neighborhood can influence me in using e-participation. | |
| | 3. My colleague can influence me in using e-participation. | |
| | 4. People around me who use e-participation enjoy various advantages when dealing with local government. | |
| Facilitating Conditions | 1. Local government need to provide official apps for e-participation. | [56]; [49]; Researchers. |
| | 2. Local government need to provide social media platforms for e-participation. | |
| | 3. Local government need to provide special menu for e-participation on their official website. | |
| | 4. E-participation system is compatible with technologies I use. | |
| | 5. I have necessary knowledge to use e-participation. | |
| | 6. I have necessary skills to use e-participation. | |
| | 7. A campaign by the local government helped me use e-participation. | |
| | 8. Incentives by the local government encouraged me to use e-participation. | |
| Use of E-Participation | 1. I use e-participation to make complaints. | [56]; Researchers. |
| | 2. I use e-participation to make recommendations. | |
| | 3. I use e-participation to make a payment. | |
| | 4. I use e-participation to get information. | |
| | 5. I use e-participation to get other relevant services. | |
| | 6. I would continue to use e-participation in the future. | |
| | 7. I would recommend to others to use e-participation. | |

C. Data Analysis Technique

The first objective of this study is to use correlation analysis to explore the relationship between awareness of the system, performance expectancy, effort expectancy, social influence, facilitating conditions and the dependent
variable of the use of e-participation. Analysis of linear relationships between variables is a typical application of correlation. This includes determining the direction, strength, and degree of relationship between the concerned variables [73] [74]. This study used Pearson’s correlation (r) to analyze the ordinal data derived from Likert scale data collection following recommendations by [74]. According to [75], a value of r between 0.1 and 0.29 indicates a weak relationship, while values between 0.30 and 0.49 indicate a moderate relationship and values between 0.50 and 1.0 indicate a strong relationship. The letters p and r typically represent coefficients. This analysis will also be used to analyze the data to test the main hypotheses given.

The second objective of this study is to use SmartPLS-SEM 3.0 software to answer the second set of research questions by determining the influence of demographic factors such as gender, age, education level, and technological experience on the relationship between citizen acceptance and use of e-participation in the Malaysian local governments. This analysis will also be used to analyze the data to test the sub-hypotheses given.

4. RESULTS

A. Response Rate and Distribution of Sample

Malaysian citizens were requested to complete the survey. We initially intended to collect data from between 500 and 1000 samples but could only obtain 484 samples. This is caused by the numerous limitations researchers encounter, which have been discussed before. According to the findings, the total response rate was 48.4% from the maximum of 1000 samples intended. For surveys, a 30% answer rate can be considered adequate, while a response rate of 50% or higher is excellent [76].

Results from the online data collection approach via Google Forms survey reveal that we only received responses from 303 participants out of 484 overall. Because Google Forms only enables respondents to send off their responses once all the provided questions have been answered, all 303 questionnaires received are entirely usable. For the offline approach, 198 finished questionnaire papers were received. However, only 181 appeared to be usable. Table III and Table IV detail the respondent’s demographic details.

<table>
<thead>
<tr>
<th>TABLE III. DISTRIBUTION OF SAMPLE ACCORDING TO THE STATES OF MALAYSIA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>States</strong></td>
</tr>
<tr>
<td>Johor</td>
</tr>
<tr>
<td>Kedah</td>
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<tr>
<td>Kelantan</td>
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<tr>
<td>Melaka</td>
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<tr>
<td>Negeri Sembilan</td>
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<tr>
<td>Pahang</td>
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<tr>
<td>Pulau Pinang</td>
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<tr>
<td>Perak</td>
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</table>

<table>
<thead>
<tr>
<th>TABLE IV. DISTRIBUTION OF SAMPLE ACCORDING TO THE STATES OF MALAYSIA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographics</strong></td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>20-29</td>
</tr>
<tr>
<td>30-39</td>
</tr>
<tr>
<td>40-49</td>
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<td>50-59</td>
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<td>60-69</td>
</tr>
<tr>
<td>70-79</td>
</tr>
<tr>
<td>Race</td>
</tr>
<tr>
<td>Malay</td>
</tr>
<tr>
<td>Chinese</td>
</tr>
<tr>
<td>Indian</td>
</tr>
<tr>
<td>Others</td>
</tr>
<tr>
<td>District of Residence</td>
</tr>
<tr>
<td>Alor Gajah</td>
</tr>
<tr>
<td>Bandar Baharu</td>
</tr>
<tr>
<td>Barat Daya</td>
</tr>
<tr>
<td>Besut</td>
</tr>
<tr>
<td>Dungun</td>
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<tr>
<td>Gombak</td>
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<tr>
<td>Gua Musang</td>
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<tr>
<td>Hulu Langat</td>
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<tr>
<td>Johor Bahru</td>
</tr>
<tr>
<td>Kampar</td>
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<tr>
<td>Keningai</td>
</tr>
<tr>
<td>Kinta</td>
</tr>
<tr>
<td>Klang</td>
</tr>
<tr>
<td>Kota Bharu</td>
</tr>
<tr>
<td>Kota Kinabalu</td>
</tr>
<tr>
<td>Kota Setar</td>
</tr>
<tr>
<td>Kota Tinggi</td>
</tr>
<tr>
<td>Kuala Kangsar</td>
</tr>
<tr>
<td>Kuala Langat</td>
</tr>
<tr>
<td>Kuala Lumpur</td>
</tr>
<tr>
<td>Kuala Muda</td>
</tr>
<tr>
<td>Kuala Nerus</td>
</tr>
<tr>
<td>Kuala Selangor</td>
</tr>
<tr>
<td>Kuala Terengganu</td>
</tr>
<tr>
<td>Kuantan</td>
</tr>
<tr>
<td>Kuching</td>
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<tr>
<td>Kuching</td>
</tr>
<tr>
<td>Kulim</td>
</tr>
<tr>
<td>Langkawi</td>
</tr>
<tr>
<td>Larut, Matang dan Selama</td>
</tr>
<tr>
<td>Manjung</td>
</tr>
<tr>
<td>Mentong</td>
</tr>
<tr>
<td>Min</td>
</tr>
<tr>
<td>Muar</td>
</tr>
<tr>
<td>Padang Terap</td>
</tr>
<tr>
<td>Pasir Putih</td>
</tr>
<tr>
<td>Pahang</td>
</tr>
</tbody>
</table>
B. The Relationship of Citizens' Acceptance and Use of E-Participation Correlation Data Analysis and Main Hypotheses Testing Results

This section presents whether the citizens' acceptance is related to using e-participation or vice-versa. Inferential statistics using Pearson Correlation testing was employed to analyze the relationship between the citizens' acceptance and the use of e-participation while answering the first research question; that is, to examine the relationship between citizens' acceptance and the use of e-participation in the local governments of Malaysia. The findings of the correlation analysis testing of the main variables and related constructs are shown in the following Table V. The findings of the respective five main hypotheses testing consisting of H1, H2, H3, H4, and H5 are shown in following Table V.

- **H1**: There is a significant relationship between the awareness of the system and use of e-participation. Pearson correlation analysis of awareness of the system and use of e-participation was revealed to be moderately positive and significant \( r = 0.663, p < 0.001 \). Hence, the hypothesis of H1 was supported.

- **H2**: There is a significant relationship between the performance expectancy and use of e-participation. Pearson correlation analysis of performance expectancy and use of e-participation was revealed to be highly positive and significant \( r = 0.831, p < 0.001 \). Hence, the hypothesis of H2 was supported.

- **H3**: There is a significant relationship between the effort expectancy and use of e-participation. Pearson correlation analysis of effort expectancy and use of e-participation was revealed to be moderately positive and significant \( r = 0.697, p < 0.001 \). Hence, the hypothesis of H3 was supported.

- **H4**: There is a significant relationship between the social influence and use of e-participation. Pearson correlation analysis of the social influence and use of e-participation was revealed to be moderately positive and significant \( r = 0.610, p < 0.001 \). Hence, the hypothesis of H4 was supported.

- **H5**: There is a significant relationship between the facilitating conditions and use of e-participation. Pearson correlation analysis of facilitating conditions and use of e-participation was revealed to be highly positive and significant \( r = 0.728, p < 0.001 \). Hence, the hypothesis of H5 was supported.

<table>
<thead>
<tr>
<th>Location</th>
<th>Values</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perlis</td>
<td>66</td>
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</tr>
<tr>
<td>Petaling</td>
<td>22</td>
<td>4.5</td>
</tr>
<tr>
<td>Pontian</td>
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<td>0.2</td>
</tr>
<tr>
<td>Putatan</td>
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<td>0.4</td>
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<tr>
<td>Putrajaya</td>
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<td>21.7</td>
</tr>
<tr>
<td>Rembau</td>
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<td>0.2</td>
</tr>
<tr>
<td>Sandakan</td>
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<td>0.2</td>
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<tr>
<td>Seberang Perai Selatan</td>
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<td>1.4</td>
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<tr>
<td>Seberang Perai Tengah</td>
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<td>7.6</td>
</tr>
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<td>Seberang Perai Utara</td>
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<td>1.7</td>
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<td>0.2</td>
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<td>Sepang</td>
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<td>Sibu</td>
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<tr>
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<td>Tuaran</td>
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<table>
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<td>SPM (Malaysian Certificate of Education)</td>
<td>85</td>
<td>17.6</td>
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<tr>
<td>Certificate/Diploma or Equivalent</td>
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<td>28.7</td>
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<td>Bachelor's degree</td>
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<td>Ph.D</td>
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<table>
<thead>
<tr>
<th>Frequency of Using Telecommunications</th>
<th>Values</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 10 times a day</td>
<td>425</td>
<td>87.8</td>
</tr>
<tr>
<td>More than 10 times a week</td>
<td>50</td>
<td>10.3</td>
</tr>
<tr>
<td>More than 10 times a month</td>
<td>3</td>
<td>0.6</td>
</tr>
<tr>
<td>More than 10 times in six months</td>
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<td>0</td>
</tr>
<tr>
<td>More than 10 times a year</td>
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<tr>
<td>Never use</td>
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<td>0</td>
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<table>
<thead>
<tr>
<th>Occupation</th>
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<th>Frequency</th>
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</thead>
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<tr>
<td>Government</td>
<td>340</td>
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<tr>
<td>Private</td>
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<tr>
<td>Self-employed</td>
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<tr>
<td>Un-employed</td>
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<td>6.0</td>
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<table>
<thead>
<tr>
<th>Occupation Position</th>
<th>Values</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top management group</td>
<td>47</td>
<td>9.7</td>
</tr>
<tr>
<td>Management and professional group</td>
<td>157</td>
<td>32.4</td>
</tr>
<tr>
<td>Implementation/support group</td>
<td>237</td>
<td>49.0</td>
</tr>
<tr>
<td>Others group</td>
<td>43</td>
<td>8.9</td>
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TABLE V. CORRELATION TEST OF INDEPENDENT VARIABLE AND DEPENDENT VARIABLE

<table>
<thead>
<tr>
<th>Awareness of the System (AS)</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
<th>Supported/Rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AS</td>
<td>.639*</td>
<td>&lt;.001</td>
<td>Supported</td>
</tr>
<tr>
<td></td>
<td>PE</td>
<td>.626*</td>
<td>&lt;.001</td>
<td>Supported</td>
</tr>
<tr>
<td></td>
<td>EE</td>
<td>.448*</td>
<td>&lt;.001</td>
<td>Supported</td>
</tr>
<tr>
<td></td>
<td>SI</td>
<td>.765*</td>
<td>&lt;.001</td>
<td>Supported</td>
</tr>
<tr>
<td></td>
<td>FC</td>
<td>.663*</td>
<td>&lt;.001</td>
<td>Supported</td>
</tr>
</tbody>
</table>

C. The Demographics Moderating Effect Data Analysis and Sub-Hypotheses Testing Results

The second objective of this study is to analyze demographic factors that may impact the relationship between citizens’ acceptance and the use of e-participation in Malaysian local governments. We use the SmartPLS 3.0 software to assess the framework using the PLS-SEM structural equation modeling method. PLS is a variance-based approach used for predictive analysis to evaluate hypotheses based on theoretical relationships (Hair et al., 2010). To accomplish this objective, 20 sub-hypotheses were created and evaluated.

1) Measurement Model

This study’s measurement model included a reflective construct. Both the internal consistency and convergent validity of reflective constructs were assessed. Internal consistency is measured utilizing Cronbach’s Alpha and Composite Reliability. The values greater than 0.7 for overall variables are shown in the following Table VI, indicating that internal consistency was established for both [77]. While Average Variance Extracted (AVE) and loadings also evaluate the convergent validity. The following Table VI indicates that all constructs have good convergent validity, with AVE values exceeding 0.5. Table VII shows all loadings exceeding 0.7, except for FC8, which showed 0.692. Seventy pieces of research disputed the convergent validity. [78] and [79] recommended removing variables with a loading value below 0.5. At the same time, [80] advocated reviewing variables with loading values between 0.4 and 0.7 before eliminating them, whereas [81] recommended 0.4. If eliminating these indicators increase the composite reliability, discard, or otherwise maintain the factors. Therefore, we decided to maintain this factor by considering that the outer loadings value of 0.692 recorded by item FC8 is close to 0.7 and the opinions of [78], [79], and [80], as well as the deciding factors of the composite reliability and valid AVE value.

TABLE VI. CRONBACH’S ALPHA, COMPOSITE RELIABILITY, AND AVE VALUES

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Cronbach’s Alpha</th>
<th>Composite Reliability</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS</td>
<td>0.844</td>
<td>0.905</td>
<td>0.761</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Age*AS</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Age*EE</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Age*FC</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Age*PE</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Age*SI</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>EE</td>
<td>0.953</td>
<td>0.964</td>
<td>0.841</td>
</tr>
<tr>
<td>EL</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>EL*AS</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>EL*EE</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>EL*FC</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>EL*PE</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>EL*SI</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>TE</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>TE*AS</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>TE*EE</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>TE*FC</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
2) Structural Model

a) For determining the structural model, the method used here is similar to that used by [77]. It consists of coefficient of determination ($R^2$), $f^2$ effect size, predictive relevance $Q^2$ and structural model path coefficients. While each of those main hypotheses was followed by the results of the demographics moderating effect sub-hypotheses of H1a, H1b, H1c, H1d, H2a, H2b, H2c, H2d, H3a, H3b, H3c, H3d, H4a, H4b, H4c, H4d, H5a, H5b, H5c, and H5d as shown in Table IX.

b) The predictive performance of the model is quantified by its $R^2$ value. [82] provide a general guideline for explaining $R^2$ values. See Table VIII below. From the results of coefficient of determination ($R^2$) testing, UEP recorded a $R^2$ value of 0.780 and obtained strong effect correlation size.

TABLE VIII. COEFFICIENT OF DETERMINATION ($R^2$) AND EFFECT SIZE

<table>
<thead>
<tr>
<th></th>
<th>$R^2$ Value</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R^2 &lt; 0.3$</td>
<td>None or very weak effect size</td>
</tr>
<tr>
<td></td>
<td>$0.3 &lt; R^2 &lt; 0.5$</td>
<td>Weak or low effect size</td>
</tr>
<tr>
<td></td>
<td>$0.5 &lt; R^2 &lt; 0.7$</td>
<td>Moderate effect size</td>
</tr>
<tr>
<td></td>
<td>$0.7 &lt; R^2$</td>
<td>Strong effect size</td>
</tr>
</tbody>
</table>

Source: [82]

c) The $f^2$ effect size can be categorized as an effect size of ($f^2 < 0.020$ is small; $f^2 < 0.150$ is medium; $f^2 < 0.350$ is large) [75]. Most $f^2$ values provide minor impacts from the significantly different constructs. Only 4 exceptions; that is, AS (0.037) recorded medium effect, EE (0.024) recorded medium effect, SI (0.035) recorded medium effect, and PE (0.325) recorded large effect.

d) $Q^2$ value was computed using the blindfold approach, with an omission distance of 7. UEP's endogenous latent variables have measured values of $Q^2$ greater than zero ($Q^2 = 0.598$). This suggests that the endogenous structure of the model is fully predictable by its exogenous inputs [77].

e) Path coefficient significance was examined using bootstrapping with 5,000 iterations to see if the offered sub-hypotheses were supported. Research data supports sub-hypotheses with $p$-values less than 0.05. As demonstrated in Table IX, all moderating effects (Gender, Age, EL, and ET) had $p$-values of more than 0.05 on the relationship between citizens’ acceptance (AS, PE, EE, SI, and FC) and the use of e-participation (UEP). The moderating effect variable does not significantly affect all the citizens’ acceptance dimensions.
and use of e-participation. Thus, all examined sub-hypotheses (H1a, H1b, H1c, H1d, H2a, H2b, H2c, H2d, H3a, H3b, H3c, H3d, H4a, H4b, H4c, H4d, H5a, H5b, H5c, and H5d) were rejected. The following Fig. 5 exhibits the demographics moderating effect results.

![Diagram of demographics moderating effect results](image.png)

**Figure 5.** Result of bootstrapping for demographics moderating effect analysis.

### 5. DISCUSSION

#### A. Study’s Discussions

Through an extended UTAUT model, this study draws and assesses the new research framework to examine citizens’ acceptance dimensions and the use of e-participation aspects in Malaysian local governments.

a) **Relationship between awareness of the system and demographics moderating effect**

Through following the findings of this study, there is a significant relationship between awareness of the system and the use of e-participation. In most cases, those aware of the advantages of e-participation systems are more motivated to use them to participate in political and governmental affairs. The findings of this study confirm [83] findings from their e-government usage literature review on awareness of the system and the use of e-participation. Before utilizing e-participation, the community must be well-informed about those systems in the first place before they can start to use [51] [21]. While according to the study by [84] found similar results in the case of the Jordan. E-participation and system services awareness are generally correlated among Jordanian citizens. In the context of Malaysia this is because there is a significant digital knowledge gap that explains this, particularly between urban and rural regions, particularly in the context of Malaysia [39]. The public may learn about e-participation platforms via various channels,

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**http://journals.uob.edu.bh**

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<table>
<thead>
<tr>
<th>Sub-Hypothesis</th>
<th>Moderating Effect</th>
<th>Original Sample</th>
<th>Sample Mean</th>
<th>Standard Deviation</th>
<th>t-Values</th>
<th>p-Values</th>
<th>Sub-Hypothesis Supported / Rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>Gender * AS -&gt; UEP</td>
<td>-0.002</td>
<td>-0.003</td>
<td>0.039</td>
<td>0.056</td>
<td>0.956</td>
<td>Rejected</td>
</tr>
<tr>
<td>H1b</td>
<td>Age * AS -&gt; UEP</td>
<td>0.090</td>
<td>0.088</td>
<td>0.053</td>
<td>1.683</td>
<td>0.093</td>
<td>Rejected</td>
</tr>
<tr>
<td>H1c</td>
<td>EL * AS -&gt; UEP</td>
<td>-0.010</td>
<td>-0.010</td>
<td>0.050</td>
<td>0.197</td>
<td>0.844</td>
<td>Rejected</td>
</tr>
<tr>
<td>H1d</td>
<td>TE * AS -&gt; UEP</td>
<td>-0.014</td>
<td>-0.014</td>
<td>0.043</td>
<td>0.320</td>
<td>0.749</td>
<td>Rejected</td>
</tr>
<tr>
<td>H2a</td>
<td>Gender * PE -&gt; UEP</td>
<td>-0.013</td>
<td>-0.016</td>
<td>0.047</td>
<td>0.282</td>
<td>0.778</td>
<td>Rejected</td>
</tr>
<tr>
<td>H2b</td>
<td>Age * PE -&gt; UEP</td>
<td>0.084</td>
<td>0.088</td>
<td>0.052</td>
<td>1.614</td>
<td>0.107</td>
<td>Rejected</td>
</tr>
<tr>
<td>H2c</td>
<td>EL * PE -&gt; UEP</td>
<td>0.001</td>
<td>0.001</td>
<td>0.057</td>
<td>0.023</td>
<td>0.981</td>
<td>Rejected</td>
</tr>
<tr>
<td>H2d</td>
<td>TE * PE -&gt; UEP</td>
<td>0.002</td>
<td>0.004</td>
<td>0.071</td>
<td>0.032</td>
<td>0.975</td>
<td>Rejected</td>
</tr>
<tr>
<td>H3a</td>
<td>Gender * EE -&gt; UEP</td>
<td>-0.038</td>
<td>-0.036</td>
<td>0.050</td>
<td>0.756</td>
<td>0.450</td>
<td>Rejected</td>
</tr>
<tr>
<td>H3b</td>
<td>Age * EE -&gt; UEP</td>
<td>0.022</td>
<td>0.022</td>
<td>0.057</td>
<td>0.383</td>
<td>0.702</td>
<td>Rejected</td>
</tr>
<tr>
<td>H3c</td>
<td>EL * EE -&gt; UEP</td>
<td>-0.015</td>
<td>-0.018</td>
<td>0.042</td>
<td>0.354</td>
<td>0.723</td>
<td>Rejected</td>
</tr>
<tr>
<td>H3d</td>
<td>TE * EE -&gt; UEP</td>
<td>-0.002</td>
<td>0.017</td>
<td>0.072</td>
<td>0.278</td>
<td>0.978</td>
<td>Rejected</td>
</tr>
<tr>
<td>H4a</td>
<td>Gender * SI -&gt; UEP</td>
<td>0.062</td>
<td>0.066</td>
<td>0.036</td>
<td>1.711</td>
<td>0.088</td>
<td>Rejected</td>
</tr>
<tr>
<td>H4b</td>
<td>Age * SI -&gt; UEP</td>
<td>-0.027</td>
<td>-0.033</td>
<td>0.036</td>
<td>0.759</td>
<td>0.448</td>
<td>Rejected</td>
</tr>
<tr>
<td>H4c</td>
<td>EL * SI -&gt; UEP</td>
<td>-0.076</td>
<td>-0.072</td>
<td>0.042</td>
<td>1.829</td>
<td>0.068</td>
<td>Rejected</td>
</tr>
<tr>
<td>H4d</td>
<td>TE * SI -&gt; UEP</td>
<td>0.012</td>
<td>0.018</td>
<td>0.042</td>
<td>0.271</td>
<td>0.786</td>
<td>Rejected</td>
</tr>
<tr>
<td>H5a</td>
<td>Gender * FC -&gt; UEP</td>
<td>0.009</td>
<td>0.005</td>
<td>0.050</td>
<td>0.185</td>
<td>0.853</td>
<td>Rejected</td>
</tr>
<tr>
<td>H5b</td>
<td>Age * FC -&gt; UEP</td>
<td>-0.083</td>
<td>-0.078</td>
<td>0.054</td>
<td>1.524</td>
<td>0.128</td>
<td>Rejected</td>
</tr>
<tr>
<td>H5c</td>
<td>EL * FC -&gt; UEP</td>
<td>0.077</td>
<td>0.080</td>
<td>0.057</td>
<td>1.345</td>
<td>0.179</td>
<td>Rejected</td>
</tr>
<tr>
<td>H5d</td>
<td>TE * FC -&gt; UEP</td>
<td>-0.003</td>
<td>-0.033</td>
<td>0.078</td>
<td>0.033</td>
<td>0.974</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

* a. Moderating effect is significant at the p-value < 0.05
including the news, individual conversations, or formalized education and promotion initiatives led by government and non-governmental organizations.

According to the results of this study, for instance, the awareness of the system and the use of e-participation is affected based on gender, age, education level, or prior experience with technology. Awareness's effect on how likely individuals is to participate in e-participation is, in a sense, unaffected by all these socio-demographic and technical elements. While these characteristics may not directly influence people's propensity to engage in e-participation, they may have indirect consequences. Individual with greater education and technological expertise may encouraged to use e-participation platforms. It is possible that younger people, regardless of their level of understanding, are encouraged to use e-participation platforms. However, there is insufficient evidence to imply that demograph or technical characteristics can control the relationship between awareness and use of the e-participation platforms in this study. At the same time, these factors may play a role in influencing people's likelihood of using these systems in different contexts.

Specifically, for the demographic moderating analysis in this study, firstly, gender does not moderate the relationship between awareness of the system and the use of e-participation. This may be due to the increase in e-participation awareness due to local government digitalization initiatives currently giving wider usage among Malaysian citizens. For instance, most Malaysian local governments nowadays strive to shift towards digitalized services instead of providing them from the counter office [13]. In addition, following the previous COVID-19 outbreak, the Malaysian local governments started to implement digital services via e-participation, including digital parking, payments, licensing, and virtual public discussion. This study is in line with the study by [85], in which they discovered that gender did not affect the correlation between system awareness and the use of e-participation.

In this study, age moderation does not alter awareness of the system and the use of e-participation. This may be due to the intensive digitalization of Malaysian local governments services, which left older people with limited options when utilizing local government services online. However, results discovered by [86] contradicted these findings. Portuguese local government agencies' system awareness and e-participation are influenced by age. They found that younger individuals more than older individuals utilize e-participation platforms for political goals. This might be attributed to disparities in the ease with technology, expertise with online communication and social media, and a desire for more simple and readily available political activity [86]. [87] argues that the government has devised and implemented a program to enhance digital literacy among older people to address current problems. If the local population were less elderly and more tech aware, they could help older people with the e-participation.

In this study, education level does not affect the relationship between awareness of the system and the use of e-participation. In most cases, those with greater education are also the most likely to use e-participation platforms. E-participation systems may be more accessible to those with more education, partly because those with higher education tend to have better computer literacy. Those with more education are also more likely to find employment in fields that require a certain level of technological competence, which may explain why they are more comfortable using various online resources. Nonetheless, this study's findings contradict [88] findings in the case study of e-participation study in the United Arab Emirates (UAE). [88] revealed that higher-education respondents are better aware of e-participation and believe government websites provide enough material and assistance for users. In addition, in the case study of local governments in Zambia and Zimbabwe, [89] discovered that education can significantly impact system awareness in numerous local governments.

In this study, the relationship between awareness of the system and the use of e-participation platforms is not moderated by technological experience. This non-significant moderating impact implies that local Malaysians have started embracing the local government service for e-participation technology. Those who have used computers and other technological equipment for extended periods are more likely to understand and be at ease with e-participation systems. People with an adequate technology foundation may be more open to trying out innovative digital tools, such as e-participation platforms. They could also be more prepared to manage technical problems using these technologies. Nonetheless, as referenced by [90] and [91] found that technical experience can significantly impact awareness of an e-participation and its application. Technology users with more expertise can use the e-participation by recognizing numerous cutting-edge technology systems. In their findings, people with less experience with technology may feel intimidated or overwhelmed by e-participation systems.

b) Relationship between performance expectancy and demographics moderating effect

This study's findings found a strong and highly positive relationship between performance expectancy and the use of e-participation in Malaysia's local government. Performance expectancy refers to how individuals perceive that using a particular technology will improve their performance [47], particularly when engaging in e-participation platforms such as online discussions and virtual political activities. In the context of e-participation, performance expectancy defines the level to which someone expects that using e-participation platforms could help them participate effectively in
government and political processes and achieve their civic objectives. Performance expectancy's high correlation reflects studies by [92] and [56]. Performance expectancy can significantly affect Qatari citizens' e-participation use, according to [92]. Furthermore, this study's findings follow with the study by [56], who conducted a similar analysis of e-participation in Portuguese local governments. They found a strong positive correlation between performance expectancy and the use of e-participation. The local community believes e-participation may improve community productivity and local government council task execution.

While based on this study's findings, the demographic variables of gender, age, education level, and technology experience do not moderate the relationship between the performance expectancy and use of e-participation in Malaysian local governments among the user of Malaysian citizens. This may be because, in every community that most respondents live in, they have an attitude of shared responsibility in ensuring the harmony of the local community is maintained. The surveyed respondents found that they can help improve their work performance, the community, and the local government when using this local government e-participation platform despite having different levels and demographic backgrounds.

Specifically, this study's demographics moderating effect findings indicate no gender effect on performance expectancy and e-participation use. These studies suggest that individual differences in personality, attitudes, and prior experience with technology may be more important in shaping these beliefs and behaviors than gender. However, [86] study have revealed different findings. Their case study of Lisbon Local Government Council study explored how gender affects high-performance expectations and e-participation. A male used e-participation more because they believed it would speed up local government council policymaking. Males were more competent in improving city council community outreach production; therefore, they were assured of participating online. This might be explained by cultural and demographic variables influencing how males and females view their strengths and competence in using technology. In contrast to the findings of this study, the female gender group is considered more confident in adopting e-participation because they feel it will enhance their performance in the community and the local government's work activities [86].

This study found no evidence that older participants were more likely to benefit from e-participation than younger participants regarding their performance expectancy dimension. According to the findings of this study, there were no significant differences in performance expectancy between older and younger people, indicating that older people in Malaysia have similar expectations regarding technology use for e-participation in local government. Further, although younger individuals may be more inclined to participate in e-participation activities, older people might be just as interested, particularly regarding problems that directly impact their age group. E-participation may strengthen job performance and the local community, making local governments' workflow more efficient and smoother based on all age groups examined. [93] observed that Kuwaiti participants' performance expectancy was unaffected by age. E-participation is easy to learn for all ages. All age groups agree that e-participation would promote work performance, especially when utilizing the e-government. However, factors including lack of access, unfamiliarity, and physical constraints may prevent older individuals from entirely using e-participation opportunities and limiting their performance expectancy.

While education level does not affect performance expectancy or e-participation in this study, it was discovered that even those with a lower education level used technology and participated in e-participation activities at significant rates. This finding parallels the findings of [93] in the case study of Kuwait, where education does not modify performance expectancy for Kuwaitis using e-participation. In addition, as per [94], e-participation performance expectancy improved with education. He emphasized that educated families' recommendations may improve community or government performance. Literacy increases local citizen e-participation in development, he discovered. This study's findings are consistent with the study by [95] in the case study of Senegal country, who found that higher-educated individuals might pose a barrier to public participation because professionals in these circles seldom have the time to become concerned about issues and welfare at the neighborhood level. This is attributed to the demands of having several professional commitments. However, [96] research on various municipalities in the Netherlands country suggests differently. Higher education levels correlate with a greater interest in e-participation activities, suggesting that the level of education plays a crucial role in the relationship between performance expectancy and e-participation usage [96]. The citizen's level of education also has a role in how they interact with the platform. High school students with a higher level of education are more likely to participate in community service activities than their lower-educated counterparts, as shown by earlier studies [96]. This suggests that those with more formal education have an advantage in digital literacy, affecting their self-assurance and participation opportunities in society. An individual's acceptance to participate in political and civic life is correlated with their level of education, which in turn might affect their usage of e-participation tools.

In this study, the performance expectancy and the use of e-participation are not significantly moderated by
technology experience. This shows that the respondents in this study believe that experience in using technology is not a problem for them in using the e-participation platform to improve performance in the community and help the local government’s work operations. Parallel to [93], they discovered that the participants’ technological knowledge and experience level did not influence Kuwait’s e-participation acceptance. While in the study of community readiness in using e-participation services in Qatar, [92] revealed that technology experience, such as internet use, did not significantly impact the relationship between performance expectancy and the intention to use e-participation.

c) Relationship between effort expectancy and demographics moderating effect

In this study, the effort expectancy and use of e-participation were significantly and moderately correlated. Effort expectancy refers to the degree to which an individual believes using technology will be simple and require minimal effort [47]. An individual’s expectations for effort in the context of e-participation is the point at which they predict having a little difficulty utilizing e-participation tools to engage in political and civic activities. In this study, e-participation in local government in Malaysia was shown to have a positive correlation with perceived effort. In other words, Malaysian citizens who believe that using technology for participating in government and civic affairs will be simple and require minimal effort have a greater probability of doing so. This seems to reason since ease and convenience significantly determine whether individuals would participate in an activity. Several variables might affect an individual’s effort expectancy, including the technology’s design and usability, the availability of resources and assistance, and the individual’s previous encounter with similar technology. For instance, [92] found that e-participation usage substantially correlates with participation effort in Qatar. Promoting e-participation requires considering people’s effort expectancy and removing any obstacles in the way of using technology for civic and political activities. For this reason, it may be necessary to make technological platforms more user-friendly and accessible, provide detailed instructions and advice on how to use them, and provide training and assistance to those unfamiliar with them.

According to the findings of this study, the demographic variables of gender, age, education level, and technology experience do not moderate the relationship between effort expectancy and use of e-participation in Malaysian local governments among Malaysian citizens. One possible explanation is that people are more willing to utilize e-participation tools provided by their local governments if they believe doing so would require minimal time or effort. Most Malaysian local governments, for instance, may have e-participation systems that have online portals for lodging complaints, recommendations, or criticism; virtual town hall meetings; and other digital tools for interacting with the local government and taking an interest in the process of decision-making. Most of the local governments in Malaysia are likely considering an e-participation strategy that is more accessible to people from a broader range of backgrounds in society. E-participation, for instance, is increasingly being used across various digital platforms, including social media, smartphone applications, and others, to engage many people across all demographics.

Specifically, for demographics moderating effect findings, gender did not affect the relationship between effort expectancy and the use of e-participation in this study. The fact suggests that, regardless of gender, people in Malaysia are just as likely to utilize e-participation for political and civic activities provided they believe it would be effortless of their time. The results of this study and the one by [86] are similar. [86] concluded that there was no difference in the level of e-participation with effort expectancy made by both genders in municipal governments. Citizens of both genders may have achieved the skill of e-participation significantly. Furthermore, they must be more selective in supplying e-participation services like "Chat Box" and "Online Bots," a new software application that serves as a virtual assistance agent for internet users and is easy to use and support. In addition, in line with this study, [93] also found no gender-modering impact on Kuwaiti e-participation use with effort expectancy. Because of this, initiatives to encourage e-participation must refrain from assuming that males or females are more or less inclined to utilize technology for this reason and instead seek to be accessible to both genders.

At the same time, age did not affect the relationship between effort expectancy and the use of e-participation in this study. This indicates that Malaysian citizens of all ages are equally likely to use e-participation for political and civic activities if they perceive that doing so will be easy and require little effort. This might be because several Malaysian municipalities prioritized convenience for the citizens they serve while developing and publicizing their latest digital tools for providing vital municipal services. This is critical for ensuring that technologies are accessible and user-friendly for individuals of all ages and for motivating older individuals to overcome any difficulties they may have in using these technologies. [86] findings match this study’s findings. They found no significant positive impacts of age on effort expectancy and e-participation use. This study shows that initiatives to increase e-participation cannot assume that people of different ages are either more or less likely to utilize technology for this reason but rather should be suited to be accessible to everyone. However, more extensive studies are needed to confirm that different age groups in each community have different rates of using e-participation in the local
government. E-participation is currently accessible to all ages thanks to local government digitalization. E-participation must be straightforward, secure, and convenient for all ages.

While in this study also, education level does not moderate the relationship between effort expectancy and the use of e-participation. This shows that Malaysian citizens with different levels of education are equally likely to use e-participation for political and civic activities if they perceive that doing so will be easy and require little effort. This study's findings are identical to those of [93], who found that Kuwaiti citizens' effort expectancy and e-participation use was unaffected by education level. They used the e-participation tools effortlessly. Thus, e-participation can be used by students of different levels.

At the same time, e-participation use and expected effort are unaffected by technology experience. The technological experience did not affect e-participation effort expectancy, based on the findings by [55]. E-participation was less affected by effort expectancy for inexperienced internet users. [92] also found that technological experience, such as internet use, did not affect the correlation between effort expectancy and intention to use e-participation (e-government) services. [93] found that Kuwaitis prefer to use the Internet to access online services, including the government's continuing e-participation initiative. Because government agencies desire user-friendly e-participation services, people with little skills can now access e-government services. Thus, non-technical users, particularly in local government agencies, will find e-participation easier to use.

d) Relationship between social influence and demographics moderating effect

This study discovered a significant and moderate positive relationship between social influence and Malaysian local government's use of e-participation. Social influence can refer to how an individual perceives that other, such as friends, family, and colleagues, think they should use technology [47]. Communicating with others, experiencing others, and being exposed to the media are all methods of influencing one's social circle. According to the results of this study, an individual's acceptance to engage in e-participation may be affected by their social environment, including the opinions and actions of others around them. Social influence can manifest in various forms. In the initial stages, it may help establish generally accepted practices for e-participation. A certain amount of study suggests that when individuals see their friends participating in something online, they are more inclined to join. Second, there is the potential for peer pressure to increase interest in joining in. An individual's sense of obligation to participate in an activity might increase if they believe their friends and acquaintances are counting on them to do so. For instance, an individual's opinion regarding technology may shift for the better if it is recommended by someone they like and respect. This study's findings reflect [97] study on e-participation usage among Saudi Arabian citizens. They analyzed the relationship between social influence (subjective norms) and e-participation use in Saudi Arabia. They discovered that family, friends, and the media in the Kingdom of Saudi Arabia significantly impact social influence to use e-participation. [97] also observed that social influence is vital and promotes e-participation. The Kuwaiti acceptance of the e-participation study by [93] matches similar results concerning social influence. Since citizens of Kuwait culture prioritizes social influence, friends and trusted top management influence many participants' views of a new system.

Besides that, in regards to the demographics moderating effect in this study, all the demographic variable, such as gender, age, education level, and technology experience, does not moderate the relationship between social influence and the use of e-participation in the Malaysian local governments. Specifically, for demographics moderating effect findings, the correlation between social influence and the use of e-participation is not significantly impacted by gender. The findings of this study correspond with one example case study conducted by [98] investigated 2,175 Electronic Document Management Systems (EDMS) users for e-participation in Portuguese local governments. They discovered no differences in the correlation between social influence and e-participation activities based on gender. Based on this study's findings, males and females have sufficient expertise in using e-participation to be less or less impacted by the community around them. The online voting mechanism is easy enough to use that member of either gender may manage it independently.

The relationship between social influence and the use of e-participation is not significantly impacted by age. [92] study aligns with this study’s findings. When looking at the relationship between social influence and the use of e-participation in Qatar, age does not have a moderating role. No outside influence prevents Qataris of all ages from accessing the e-participation platform [92]. They have chosen to use e-participation independently. The relationship between social influence and the use of e-participation is not modulated by educational level. The results from [55] study showed that social influence to use e-participation for e-government programs in Saudi Arabia was not modulated by education level. Technology experience does not moderate the relationship between social influence and using e-participation. As per [55], technological experience negatively impacted social influence to use the Saudi Arabian e-government program. While [92], who studied Qatari community readiness, found that technological experience, such as the
Internet, did not substantially moderate the relationship between social influence and the intention to use e-participation services. E-participation choices are growing in local governments nowadays. Simple instructions were made before a user could use the system without difficulties.

e) Relationship between facilitating conditions and demographics moderating effect

The findings of this study also show that Malaysian local citizens’ use of e-participation positively correlates with facilitating conditions. Facilitating conditions refer to the resources and infrastructure necessary for individuals to participate in e-participation initiatives. Access to technology, the availability of information and resources, and technical support are among the main facilitating conditions that can influence the use of e-participation. E-participation projects may be inaccessible to those with specific barriers to participation, such as a lack of internet connection or appropriate technical resources. People may be less inclined to participate if they lack access to the necessary resources or knowledge. Individuals may need guidance in exploring e-participation platforms or utilizing the essential tools; therefore, access to technical assistance is another key helping factor. People are less likely to engage in e-participation activities if they experience frustration or confusion due to a lack of competent technological assistance. The design and functioning of e-participation platforms may influence their adoption in addition to these facilitating conditions. Participation may be increased by providing a platform that is not only accessible but also simple to use. Since the government promotes e-participation, the public perceptions of using e-participation may significantly change. Some case studies, such as from [90], found similar results when they surveyed 370 local citizens using e-participation in several European local governments. They discovered that e-participation acceptance and usage by the local citizens depend much on facilitating condition factors. These findings show that citizens are more inclined to use e-participation in the future if they have access to digital equipment, skills to use it, local government assistance, and good public participatory process information. [99] examined the correlation between facilitating conditions and e-participation in the UAE. In [99] study, they also found that good facilitating conditions have a significant relationship with using e-participation in the UAE government institutions.

Besides that, in regards to the demographics moderating effect in this study, all the demographic variables, such as gender, age, education level, and technology experience, does not moderate the relationship between facilitating conditions and the use of e-participation in the Malaysian local governments. This study’s findings contradicted with findings from [98]. This may be due to the access to assistance and technical support always provided by the local government in Malaysia to assist users in using the e-participation access provided, regardless of their demographic background and digital capabilities. Furthermore, the surveyed respondents think the e-participation platform is continuously updated and well-maintained. Moving to some international case studies, in specific, in this study’s findings gender demographic variable is contradicted by the study by [86], as they discovered that gender could significantly affect the Portuguese citizens’ use of e-participation, as shown by their research. Their study found that females prefer to use e-participation platforms in their local government. This is because local government technical support is always available for users using their e-participation services. Similar to gender, age moderating effect, [86] also discovered contradicted this study’s findings.

E-participation usage trends among Portugal’s elderly are higher when encouraged with many good facilitating conditions. E-participation is difficult for older individuals because of insufficient technological knowledge and the willingness to learn new skills based on their studies promptly. They found that elderly individuals, who are used to visiting the local city council for local concerns, were less inclined to use e-participation than younger ones. In this study, education level does not moderate the relationship between facilitating conditions and e-participation use. Technical skills are currently taught at multiple educational levels. This is because current digital literacy is growing significantly in Malaysia. However, [100] disagreed because education level can moderate the relationship between local government e-participation technology acceptability and facilitating conditions in their case of Czechia country study. Without A-levels, secondary education performed poorly. More exposure to systems that require high facilitating conditions, such as relevant technical knowledge and skills, local government assistance, and new technology promotion, is needed for this group. At the same time, e-participation system uses and facilitating conditions are not restricted by technological experience, based on the evidence from this study. Similarly results by [101] in the case of e-participation study in Jordan. No moderating effect of technological experience was found between community-facilitating conditions and the use of e-participation in Jordan. Also, comparable findings were discovered by [102] when they analyzed data from 200 Portuguese e-participants. The impact of facilitating conditions on e-participation was not significantly moderated by technological experience.

B. Theoretical Implications

Technology Acceptance Model originated from [103] at an early stage and is commonly used in technology acceptance. [47] synthesized and integrated the model into the UTAUT. A unified theoretical model of UTAUT incorporates several concepts and notions [47]. This study advances knowledge by integrating electronic public
participation in local communities, especially in Malaysia’s local governments. In this study, we used a slight modification from the UTAUT. This model hypothesizes that citizens' acceptance, which incorporates “performance expectancy,” “effort expectancy,” “social influence,” and “facilitating conditions,” impacts whether an individual uses e-participation (dependent variable). Citizens' acceptance added "awareness of the system" to better-fit research aims. Citizens' acceptance to use e-participation is also expected to be regulated by demographics such as gender, age, the voluntariness of use (not applicable, replaced by education level), and technology experience. This study adds "awareness of the system" and "education level" to the original UTAUT. This e-participation-based design may provide fresh light on the UTAUT. Users' early awareness of the e-participation may be detected by system awareness.

Moderating effects, which consider factors like gender, age, education level, and technology experience, are not exclusive to this study. Findings from the studies of [86], [88], [89], and others have proved this. However, all demographic factors unable to moderate the relationship between citizens' acceptance and the use of e-participation in this moderation effect study. Thus, in Malaysia, local communities' acceptance to participate in local government via digital means is not significantly influenced by demographic factors. Next, other public institutions may use the study as a reference for their assessments. Thus, future research may strengthen and widen the understanding of e-participation, citizens' acceptance, and the moderating effect of various demographic variables, particularly local government e-participation. Likewise, this study's findings have added to the theoretical and literary canon while also providing insights into utilizing e-participation from the perspective of the Malaysian local governments. From the findings, the UTAUT model has been optimized with new factors for good e-participation community practices in Malaysia.

C. Practical Implications

The findings of this study may be used as a reference by policymakers in developing and revising targets related to increasing the usage of this e-participation platform in Malaysia, especially among local government institutions. The research results also show that citizens' acceptance frameworks help increase the quality of local government by encouraging the use of e-participation in local governments. Since e-participation is open to individuals from various living, it is vital to consider how different demographics could be affected. So, each member of this online community contributes something unique.

Research findings may also be used for the KPKT and other local government organizations and by future researchers to enhance the functionality of Malaysia's e-participation. To further increase the local government’s performance in empowering this e-participation, KPKT is also tasked with planning improvement programs, particularly in training and workshops related to the variables of awareness of the system, performance expectancy, effort expectancy, social influence, and facilitating conditions. The local government council may monitor how the training is being implemented and provide any relevant data that might help the community's e-participation efforts advance in a predictable, steady manner.

The state government, district authorities, and the mayor/chairperson of the local government council may leverage this study's findings to recommend municipality e-participation integration. The interested parties, digital consultants, and telcos can create a more flexible, stable, and user-friendly infrastructure to make the local community comfortable with this government's e-participation. Local government officials may also use council-level management to gather public support for increased e-participation use. To enable local government councils to work more effectively, the Mayor/Chairman may provide training and expertise for using the e-participation. Based on local community e-participation performance, this study may help the KPKT acquire high levels of professionalism among local government council personnel.

D. Limitations and Future Research

This study does have a few limitations attached to it. First, this study is quantitative, and all participants are from the local community in Malaysia. This study relies on quantitative data, with no qualitative research data from interviews with relevant parties included exclusively as supporting data. In order to learn about how e-participation is being used and how it is being implemented in the local community, we relied only on quantitative data. Despite several attempts to recruit additional participants via various channels and promotions, we could only collect data from 484 people, even though the study included all local governments in Malaysia. This study's data was gathered using a questionnaire sent to participants by email in participants, in-person and completed via Google Forms. The data sharing and re-collection procedure have taken around four months. Several issues have surfaced for the researcher, such as respondents' preconceived notions about the standard of local government services. In the last step of a quantitative research design, respondents are asked to use a Likert scale to convert their qualitative responses to numeric data. Respondents' replies might be biased if they believe they are being influenced. As a result, qualitative instruments like interviews and focus groups might be used in future research to obtain data from respondents who are representative of the local Malaysian population. More studies may be done to examine this e-participation from two angles. The
research may be done via the collection of qualitative data from two sources: first, the general public who uses the system, and second, the service provider of the system of the e-participation itself, the local government.

6. Conclusion

Using an extended UTAUT model, this study sheds light on how citizens’ acceptance standpoints might affect the use of e-participation in Malaysian local councils. Evaluations were made using information gathered from 484 different Malaysian communities. The effects of e-participation were significantly impacted by all citizens’ acceptance dimensions, including awareness of the system, performance expectancy, effort expectancy, social influence, and facilitating conditions. There is a correlation between citizens’ acceptance and the use of e-participation, but it is not significantly affected by any of the moderating variables’ effect factors. These studies can facilitate the public sector, particularly KPKT and all every local government agency in Malaysia, in developing strategies for promoting and dispersing e-participation among the local communities for long-term use; for instance, sustaining and strengthening residents’ motivation in those who were initially hesitant to use e-participation and those who continued to use them. The model provides a framework for academics to probe further into what drives local communities to accept e-participation.

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References


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