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# The Impact of Trust in Government – Young Voters' Behavioral Intention to Use I-voting in Slovenia

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**Abstract**

In order to create public value and meet the demands of the modern information society, governments and public administrations strongly rely on information technology and e-government, but its acceptance is significantly influenced by the level of citizens' trust in government. This study explores the issue of citizens' trust in government in relation to i-voting in Slovenia, a country with existing interest in i-voting but a low level of trust in government, especially among the young population. The authors analyze how such distrust impacts behavior intention towards i-voting, decomposing trust into a political component and an administrative component, and into local and state levels. Based on a modified version of the Unified Theory of Acceptance and Use of Technology, the results of 194 respondents show that young student voters' trust in politicians and electoral committees does not affect their intention to use i-voting. However, they trust the local level of government more than the state level, and electoral committees more than politicians.

**Keywords:**

E-government, I-voting, trust, technology acceptance, UTAUT, Slovenia

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## 1. Introduction

E-government denotes the use of information and communications technology (ICT) by government bodies to transform user relationships and improve government efficiency and transparency (World Bank, 2009), which is only feasible when e-government services are sufficiently accepted. Reliability, trust, security, and transparency are the essential acceptance factors, as explained by Carter et al. (2016), and a lack of trust has been found by many researchers to be a key factor in determining low acceptance rates (Belanche et al., 2012; Berdykhanova et al., 2010; Li, 2021).

Trust is vital when information technology supports democratic processes (Hujran et al., 2020). Trust in government is also positively related to engagement in e-participation (Choi & Song, 2020). The impact of trust is crucial when the technology is utilized to enable electoral processes such as electronic voting (e-voting) and internet voting (i-voting) (Mensah, 2020). According to Ali and Al Mubarak (2018) and Berdykhanova et al. (2010), *trust in technology* and *trust in government* as a service provider are key i-voting determinants. Trust in technology is well-researched, and various research studies attest that it significantly affects *trust in e-government* and the intention to use e-government services (Carter et al., 2016; Alzahrani et al., 2017; Li, 2021). Citizen's higher perception of organizational trustworthiness (trust in government) is one of the pre-interactional factors determining trust in e-government (Colesca, 2009, p. 8), and this trust significantly affects e-government acceptance (Warren et al., 2014).

The reason why we should be concerned with e-government is that besides the most frequently cited reasons of convenience, cost reduction, and higher turnout (Petitpas et al., 2021), e-government especially addresses the younger population, who are interested in digital technology but much less in democracy (representative or participatory). Digital natives' participation in such processes, particularly in elections, is declining, although this decline is not limited to them alone. Negative and cynical election campaigns targeted at the older population and suspicions of electoral fraud are further driving this decline (Baudier et al., 2021; *Economist*, 2014). Consequently, governments are endeavoring to attract the younger population back into the democratic process by trying to offer e-government services based on technology they know and trust.

This paper examines the impact of trust in government on digital native' i-voting acceptance, decomposing trust into: (1) an administrative component – trust in government bodies, including legislative bodies, ministries, and local authorities (Bannister & Connolly, 2011); and (2) a political component – trust in elected and appointed political office holders (van der Meer & Zmerli, 2017). The research, conducted in Slovenia, including an empirical survey of young, digitally native university students, highlights the impact of trust in government on the behavioral

intention to use i-voting in surroundings where i-voting has yet to be tested and implemented. The impact is additionally explained by means of demonstrated trust decomposition, which, to the best of the authors' knowledge, has not been tested in i-voting acceptance studies thus far. We approached and introduced the decomposed notion of trust in government with two components: (1) the above-mentioned political and administrative component and (2) the component of government level (local and state). The research additionally demonstrates the utility of the domain-specific, modified Unified Theory of Acceptance and Use of Technology (UTAUT) model used.

## 2. Literature Overview and Theoretical Premises

### 2.1. Trust, Government, and E-Government

*Trust in government* refers to the public's perception of the government's performance of its assigned tasks, civil servant honesty, and public interest performance (Wang & Wan Wart, 2007). *Trust in e-government* is mutually and multidimensionally connected to trust in government: trust in government affects e-government take-up and vice versa (Hodžić et al., 2021; Warren et al., 2014), and e-government trust leads to increased e-government take-up and improved trust in government (Shareef et al., 2011). Furthermore, according to Baudier et al. (2021), trust is considered key to the acceptance of disruptive technologies such as i-voting. Furthermore, political choices made by government elites contribute to the e-government reform and the reform of its services (Zankina, 2020). Today, diminishing trust in government is global (Eide, 2014): governments and the media enjoy lower levels of trust than non-governmental organizations (NGOs) and business institutions (Edelman, 2019). Despite a significant increase in trust in government during the Covid-19 pandemic in some countries (Edelman, 2020), long-standing trends attest that government is generally not trusted.

Trust is especially important in democratic environments in which participation and elections play an important role. *Trust in government* has two-components: (1) *political trust*; and (2) *trust in the electoral committees and their activities*. Political trust has been defined as citizens' confidence in political systems, institutions, organizations, and incumbents (Hooghe & Stiers, 2016; Turper & Aarts, 2017), and some authors argue that low political trust leads to low turnout rates (Hooghe, 2017). Trust in the electoral committees and their activities mainly addresses electoral integrity in terms of the public's perception of elections being "*free and fair*" (Norris, 2013, p. 565). Because elections are believed to be "*procedures for converting votes into political power*" (Lehoucq, 2003, p. 233), there have been many cases of fraudulent elections globally. The occurrence of malpractice, such as fraud, manipulation, and corruption, has affected electoral process credibility and consequently resulted in distrust in elections and low turnout (Carreras & Irepoğlu, 2013). However, such

claims of ballot rigging are often misused as a reason for bad voting results; after losing the 2020 election, Donald Trump pushed many allegations of election fraud and whatever the outcome, such allegations further undermine election credibility.

## 2.2. I-voting and Trust

Despite awareness of the aforementioned risk, there have been many different instances of i-voting globally. Since the first pilot election in the USA in 2000, many countries have initiated i-voting, but experience differs. While some of the pioneering countries have legally adopted partial i-voting, that is, i-voting limited to an area or specific group/type of voter in Armenia, Australia, Canada, Switzerland, Mexico, New Zealand, Paraguay, Russia, and the USA, others have discontinued i-voting following bad experiences, i. e. Spain, France, India, Norway, the Netherlands, and the UK, or perceive it as unfeasible, i. e. Finland (Applegate et al., 2020). Even so, Estonia, a global i-voting flagship country, conducted eleven i-elections at all levels of government between 2005 and 2019, with a 44.8 percentage points increase in the i-voter share (State Electoral Office of Estonia, 2019), indicating a steady increase in trust towards i-voting. Successfully introduced i-voting elections are encouraging, but unsuccessful trials undermine trust in the voting process and government and consequently dissuade countries from further utilization.

## 2.3. To I-vote or not to I-vote

Voting process digitization brings new challenges to the technological, political, and social spheres when we consider the dilemma of whether to introduce i-voting (Baudier et al., 2021). Supporters emphasize increased convenience, accessibility for the displaced, disabled, and absent, efficiency in terms of the faster casting of ballots, error-free counting and results, increased turnout and cost reduction, increased minority shareholder voting participation, and improved corporate social responsibility performance (Feng et al., 2021). However, there is still no firm evidence supporting the positive impact of i-voting on turnout (Carter & Bélanger, 2012; Germann & Serdült, 2017), and it has been proven that i-voting does not attract new voters (Applegate et al., 2020). Petitpas et al. (2021), however, attest that specific groups of citizens find i-voting attractive: i-voting represents an effective method of increasing electoral participation among citizens abroad (Germann, 2021). Nemeslaki et al. (2016) found that in the case of educated and internet-ready young Hungarians, online voting would change attitudes toward i-voting. Furthermore, there is a chance that i-voting in one election increases one's propensity to vote in the future, as holds true for "classical" voting (Dunaiski, 2021). I-voting cost-effectiveness has been proven in Estonia, where casting ballots by means of the internet was found to be the cheapest method available (Krimmer et al., 2020). LeRoux et al. (2020) state that voter participation rates positively corelate with the number of information and utilities that help to educate voters and promote turnout.

Conversely, opponents state that i-voting initiatives have been driven by the *fetishization* of technology engendered by i-voting vendors, ECs, enthusiasts, and computer security non-professionals, which blurs the perception of the real i-voting problems (Cheeseman et al., 2018). Security, secrecy, and privacy vulnerabilities, as well as fraud and corruption opportunities, are the most frequently cited underminers of i-voting credibility, which further drives negative attitudes and campaigns against its viability.

Finally, i-voting should also be considered a means to address future threats, such as those similar to the current COVID-19 situation.

## 3. The Slovenian Case

Since the collapse of communism in the late 1980s, the countries of Central and Eastern Europe (CEE) have been transitioning from being centrally planned to free market economies. Slovenia gained independence from the Socialist Republic of Yugoslavia in 1991 and shortly after joined NATO (2004), the EU (2004), and then the OECD (2010). The literature attests that Slovenia's transition has been one of the most politically and economically stable in the region: The Bertelsmann Stiftung's Transformation Index (BTI) places Slovenia 6th in terms of the quality of democracy (Bertelsmann Stiftung, 2018), and (Gracer, 2013) finds it to be the most successful of the post-transition former Yugoslavian states.

The latest Digital Economy and Society Index (DESI) report ranks Slovenia's digital transition 16th out of all EU member states, below the EU average (European Commission, 2020). However, Slovenia is among those countries assessed as very high in terms of the E-Government Development Index (EGDI) and E-Participation Index (EPI) (United Nations, 2020). The research by Androniceanu et al. (2020) showed that according to the e-government clusters in the EU, Slovenia fits in the same cluster as Estonia, Lithuania, Luxemburg, Poland, Portugal, and Slovakia. Slovenians perceive public sector corruption as very high: with a Corruption Perceptions Index of 60, Slovenia is ranked 35th out of 180 countries worldwide, and below the EU and OECD average (Transparency International, 2021). Trust in Slovenia's government declined the most out of all OECD countries between 2007 and 2018. Compared to the OECD average of 45%, only 24% of Slovenians trust their national government (OECD, 2019). Politicians, political parties, the government, and the legislature are the least trusted institutions and professions in Slovenia, and this negatively affects voter turnout.

Slovenia's interest in i-voting dates back to 2002; the E-voting Project Council at the Ministry for the Information Society issued a feasibility study on e-voting in 2004, which found i-voting too risky and unmanageable pursuant to Slovenia's immature level of technology (Jukic & Vintar, 2006). A lack of normative grounding was found

to be the key obstacle to the success of the many initiatives proposed, and although amendments were proposed to the National Assembly in 2003, 2007, and 2008 to provide the necessary legal framework for such grounding, none were supported politically. In 2010, Slovenia's municipalities initiated a debate with the Ministry of Public Administration on introducing i-voting, but a lack of political consensus led to its abandonment. A third-party start-up pioneered a parallel i-voting trial during the parliamentary elections in 2018 using blockchain technology, in which 1,891 voters cast ballots by means of the internet.

The current pandemic has increased interest in the provision of online services to diminish the spread of infections. Despite the aforementioned risks, i-voting is back on the agenda as a means of providing free, fair, and especially safe elections, a key pillar of democracy. The Universities of Ljubljana and Maribor elected representatives on their faculty and student bodies in the autumn of 2020 by means of i-voting, whereby fairly simple and easy-to-use poll and survey tools were used for remote voting, so the universities' unions and students found these tools vulnerable with regard to security, secrecy, and privacy, and deemed the adopted approaches frivolous and unprofessional. Nevertheless, the University of Maribor conducted a second set of elections based on changed by-laws and using a certified, dedicated i-voting system, and no problems were detected. Furthermore, turnout was three times that of elections when live polling was enabled on university premises. Finally, the small municipality of Hoče-Slivnica planned to hold a consultative referendum in a similar fashion but was unable to progress further because Slovenia's legislation does not allow electronic voting; consequently, it has requested that the Constitutional Court reconsider the relevant legislation.

Most of the published research on i-voting applies to countries with existing experience in terms of systems already in place and trials, and Slovenia has no such experience. However, findings show that trust in its broadest sense and pre-interactional technology acceptance are key to adoption (see the previous section); therefore, i-voting is considered suitable for countries with a tendency towards it even though they have not experienced it, and this complies with the recommendations of Applegate et al. (2020) in relation to considering trust issues before introducing technology into election processes.

## 4. Research Framework and Hypotheses Development

### 4.1. The Conceptual Model

The technology acceptance theory is broadly supported by research and in many cases associated with e-government (Belanche et al., 2012; Carter et al., 2016; Kanat & Ozkan, 2011; Li, 2021). Venkatesh et al. (2003) conducted an overview and comparison

of eight existing technology acceptance models in 2003. They developed and confirmed the Unified Theory of Acceptance and Use of Technology (UTAUT), which is deemed to be more precise, stable, valid, and feasible, and explains over 70% of the behavior in technology acceptance. It is considered to be the most comprehensive theory of ICT acceptance (Waehama et al., 2014). UTAUT is described with four basic constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions), which are the determinants of behavioral intention and use behavior. The constructs are moderated by age, gender, experience, and voluntariness of use.

Multiple authors have proven the suitability of using the UTAUT model for e-government, and they have proposed a variety of contextual expansions of the baseline model (Alawadhi & Morris, 2008; Alshehri et al., 2012; Voutinioti, 2013). Several i-voting studies have been conducted (Germann, 2021; Górny, 2021; Nemeslaki et al., 2016), but few have used UTAUT in relation to i-voting acceptance (Agbesi, 2020; Mensah, 2020; Powell et al., 2012). Because UTAUT does not cover a factor of trust an adjustment was needed, as was the case for other, similar, research (Alawadhi & Morris, 2008; Alshehri et al., Alghamdi 2012; Mensah, 2020; Voutinioti, 2013).

Given the cited reasons and cases of implementation, we consider the UTAUT model to be suitable as a foundation for conducting research in the i-voting context, but factors related to trust were added to the model. The authors therefore applied UTAUT to analyze the factors affecting *Behavioral Intention* (**BI**) to use i-voting by Slovenian students and adapted the original model for the purposes of this study. Accordingly, the elements of the adapted model and proposed hypotheses are explained in the following section.

## 4.2. Research Hypotheses

*Performance Expectancy* (**PE**) refers to the degree to which an individual perceives that using a system will help in attaining a gain in performance (Venkatesh et al., 2003). PE has been found to be positively related to e-government (Alshehri et al., 2012) and also i-voting behavioral intention (Agbesi, 2020; Mensah, 2020; Powell et al. 2012). Venkatesh et al. (2003), in his original development of this model, claimed that PE is the strongest predictor of BI, and the meta-analysis of 27 UTAUT research studies by Dwivedi et al. (2011) showed the same. Powell et al. (2012) even showed that PE is positively related to i-voting behavioral intention for young adults 18–25 years of age, as well as for senior citizens aged 60 plus. Nemeslaki et al. (2016) and Agbesi (2020) also proved that PE was a significant predictor of students' i-voting BI. For the student population, internet-based services are a part of daily life, so they represent "potential young, technologically savvy on-line voters" (Nemeslaki et al., 2016, p. 709). Therefore, we expect that PE influences i-voting BI, and H1 was proposed.

**H1:** PE positively influences i-voting BI.

*Effort Expectancy* (**EE**) refers to the expected degree of an individual's belief in the simplicity of learning and using i-voting. Researchers found positive impacts of EE on BI regarding e-government and i-voting (Agbesi, 2020; Alawadhi & Morris, 2008; Nemeslaki et al., 2016). Although Powell et al. (2012) found an insignificant impact of EE on intent to vote for young adults in 2012, and Mensah (2020) found similar results in 2020 in Ghana, we consider todays' students in developed countries to be digital natives who utilize easy-to-use ICT on a daily basis and thus expect low effort when i-voting. Hence, we expect that EE influences i-voting BI, and H2 was proposed.

**H2:** EE positively influences i-voting BI.

*Peer Influence* (**PI**) is considered to be the degree to which peers influence i-voting behavioral intention. This narrows the original model's Social Influence factor (Venkatesh et al., 2003) and allows us to evaluate the degree to which peers influence an individual's system use (Alawadhi & Morris, 2008). The subjective norm, considered to be a variation of PI, i. e. that an individual is affected by social pressure, was proven to be significantly and positively related to citizens' engagement in e-participation (Choi & Song, 2020). Social Influence, an extension of PI, was proven to have a significant positive relationship with voters' intentions to vote online (Powell et al., 2012). Similar results were detected by Chauhan et al. (2018) in relation to e-voting in India. Therefore, we expect that PI influences i-voting BI, so H3 was proposed.

**H3:** PI positively influences i-voting BI.

*Trust in Politicians* (**TP**) represents the degree to which citizens trust the benevolence, integrity, and competence of elected and appointed office holders with regard to i-voting (the political component) (Mayer et al., 1995; McKnight et al., 2002). Schaupp and Carter (2005) have already proven that a higher level of student trust in government (officials, politicians, legislators, and systems developers) is positively related to higher levels of i-voting BI. Therefore, we expect that TP influences i-voting BI (hypothesis H4).

**H4:** TP influences i-voting BI.

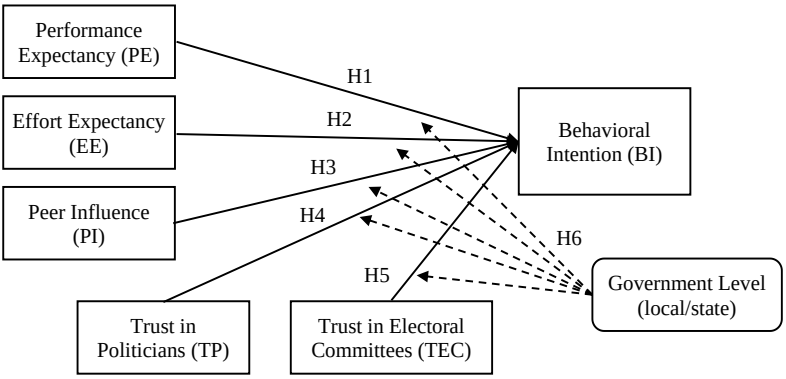
*Trust in Electoral Committees* (**TEC**) (the administrative component) represents "*the degree to which citizens believe and have confidence in the ability of electoral management body to manage and conduct elections within the confines of the laws,*

*regulations, norms, and ethics governing the administering of elections*" (Mensah, 2020, p. 22). Since electoral committees are expected to ensure free and fair elections, they are important stakeholders in terms of building trust in e-government (Warkentin et al., 2018). Ali and Al Mubarak (2018) and also Mensah (2020) have proven the significant influence of TEC on BI, and Baudier et al. (2021) stated that trust in government is the biggest issue surrounding the voting process. Regarding the high Corruption Perceptions Index and low trust in government in Slovenia, we expect that low TEC would reflect low i-voting BI in Slovenia's landscape, so we proposed H5.

**H5:** TEC influences i-voting BI.

**Figure 1:**

Research model for i-voting acceptance




**TP** and **TEC** are the cornerstones of this study, and both are aligned with diminishing trust in government. For a better understanding of the moderating effects of *Levels of Government* on the intention to use i-voting, the authors further explored the existence of the statistically significant impacts of all factors on BI locally and nationally. Kukučková and Bakoš (2019), for example, proved that participatory budgeting use, including the element of trust, impacted voter turnout in local elections more than in national elections. Bearing in mind the proven impacts of levels of government on trust in government (also termed the "*paradox of distance*"; Eggers et al., 2021; Powell et al., 2012), we therefore additionally introduced the following hypothesis:

**H6:** The Government Level has a moderating effect on the relationship between PE, EE, PI, TP, TEC, and BI.

As they are irrelevant for our research, some of the standard UTAUT elements were excluded (Table 1) leading to the final research model for i-voting acceptance (Figure 1).

**Table 1:**

Omitted elements

| | |
|---|---|
| ***Facilitating Conditions, Use Behavior, Experience*** | This study involves only **BI** and i-voting as an e-government service is not yet available in Slovenia, so use behavior cannot be measured. |
| ***Age*** | The use of *age* is not sensible given the peer sample of respondents (minimal age difference). |
| ***Gender*** | Similar extant research does not support an impact on BI (Alshehri et al., 2012; Powell et al., 2012). |
| ***Voluntariness of Use*** | Election participation is voluntary in Slovenia, and i-voting is only offered as an additional experimental voting option. |

## 5. Methodology and Data Reliability

### 5.1. Respondents Profile

University students were selected as the surveyed population for our research, which is similar to many other studies. This may be considered a shortcoming of the research, but it does not represent misuse for "*practical reasons and for convenience's sake*" (Alawadhi & Morris, 2009, p. 586). Furthermore, authors in the field of e-government acceptance (Mensah, 2019; Samsudeen & Thelijjagoda, 2015) and i-voting (Agbesi, 2020; Nemeslaki et al., 2016; Warkentin et al., 2018) find students to be an appropriate research population. University students do not represent the whole population, nor do they represent all young people, but they are an ICT-savvy, educated, young adult sub-population most likely to vote online (Germann, 2020; Warkentin et al., 2018); furthermore, LeRoux et al. (2020) state that this represents an ideal opportunity for local government to design their i-voting ICT to appeal to younger citizens, those most likely to utilize technology, who currently evidence the lowest turnout rates. We consider university students to be capable of objectively understanding the nature of i-voting and of expressing their Behavior Intention (BI) regarding such, as well as to be possible flag-bearers for initiatives to create the requisite social climate for i-voting

implementation.

The survey encompassed unemployed undergraduate students from two Slovenian universities who were at least 18 years old, and consequently eligible voters. Due to full anonymity, no demographic data were recorded. According to the Statistical Office of the Republic of Slovenia, the percentage of young Slovenian citizens aged between 19 and 24 years old studying at one of the higher education institutions in 2020 was 48.6%, i. e. almost half of all young Slovenian voters.

### 5.2. Data Collection

The quantitative study used a survey with questions selected from studies focusing on trust and UTAUT; the original UTAUT survey was adapted for the purposes of this study by including questions based on a literature review and related to trust and voting. Responses were scaled using a five-point Likert scale.

The questionnaire was first tested on five respondents from each university; next, 232 questionnaires were distributed in paper form to students in classrooms, of which 194 were valid, so the general "rule of thumb" for minimum sample size to make it valid or useful was not met (Sideridis et al., 2014). Kline (2016, pp. 11–12) attests that a minimum sample size of approximately 200 is acceptable as long as its Kaiser-Meyer-Olkin (KMO) value is 0.6 or greater; our sample is accordingly acceptable (KMOLocal = .805, KMOState = .798) for further analysis.

## 6. Results

### 6.1. Measurement Model

The results of the measurement model are shown in Table 2. The resulting factors, based on factor analysis using maximum likelihood, orthogonal (Varimax) rotation, KMO, and Bartlett's spherical test, were verified and confirmed by means of appropriate average variance extracted (AVE) values and squared inter-construct correlation (SIC). Three procedures proposed by Fornell and Larcker (1981) were used to assess and confirm convergent validity: an internal consistency check, where the Cronbach α should be $\alpha > 0.7$; a composite reliability (CR) check, where values should be $CR > 0.6$ (Hair Jr. et al., 2016); and a confirmatory factor analysis (CFA), where acceptable item reliability is attained if the factor loading values are $\geq 0.4$ with a sample of approximately 200 (or more) (Hair et al., 2010) or $\geq 0.5$ (Truong & McColl, 2011), which is the case regarding our results.

**Table 2:**

Values of factor loadings, Cronbach α, and the composite reliability index (CR)

| Construct | No. of variables | Local level | | | State level | | |
|---|---|---|---|---|---|---|---|
| | | Cronbach α | Loadings | CR | Cronbach α | Loadings | CR |
| **PE** | 3 | 0.845 | PE1 .81<br>PE2 .91<br>PE3 .72 | 0.913 | 0.845 | PE1 .81<br>PE2 .91<br>PE3 .72 | 0.913 |
| **EE** | 3 | 0.826 | EE2 .87<br>EE3 .89 | 0.931 | 0.826 | EE2 .86<br>EE3 .90 | 0.931 |
| **PI** | 2 | 0.843 | PI1 .59<br>PI2 1.24 | 0.951 | 0.843 | PI1 .86<br>PI2 .85 | 0.909 |
| **TP** | 3 | 0.814 | TP1 .90<br>TP3 .75<br>TP5 .67 | 0.886 | 0.789 | TP2 .74<br>TP4 .78<br>TP6 .73 | 0.871 |
| **TEC** | 3 | 0.889 | TEC1 .86<br>TEC3 .84<br>TEC5 .86 | 0.937 | 0.929 | TEC2 .92<br>TEC4 .83<br>TEC6 .92 | 0.962 |
| **BI** | 3 | 0.893 | BI1 .84<br>BI3 .89<br>BI5 .85 | 0.941 | 0.907 | BI2 .88<br>BI4 .92<br>BI6 .92 | 0.948 |

The discriminant validity between constructs was checked and confirmed on the basis of the rule that the square root of every AVE exceeds the correlation among any pair of latent constructs and the square root of the average variance extracted is greater than 0.50 (Fornell & Larcker, 1981). The resulting factors (Table 3) were verified and confirmed with appropriate values of AVE and squared inter-construct correlation (SIC).

**Table 3:**

Discriminant validity on the local (left) and state (right) levels – values of AVE and squared inter-construct correlation (SIC) (in bold)

| Construct | AVE | PE | EE | PI | TP | TEC | BI |
|---|---|---|---|---|---|---|---|
| **PE** | 0.67 | **0.82** | | | | | |
| **EE** | 0.78 | 0.36 | **0.88** | | | | |
| **PI** | 0.94 | 0.03 | 0.01 | **0.97** | | | |
| **TP** | 0.60 | 0.00 | 0.00 | 0.01 | **0.78** | | |
| **TEC** | 0.73 | 0.02 | 0.06 | 0.00 | 0.27 | **0.85** | |
| **BI** | 0.74 | 0.49 | 0.19 | 0.09 | 0.01 | 0.03 | **0.86** |

| Construct | AVE | PE | EE | PI | TP | TEC | BI |
|---|---|---|---|---|---|---|---|
| **PE** | 0.67 | **0.82** | | | | | |
| **EE** | 0.78 | 0.36 | **0.88** | | | | |
| **PI** | 0.73 | 0.06 | 0.02 | **0.85** | | | |
| **TP** | 0.56 | 0.00 | 0.01 | 0.03 | **0.75** | | |
| **TEC** | 0.82 | 0.01 | 0.01 | 0.04 | 0.18 | **0.91** | |
| **BI** | 0.77 | 0.41 | 0.19 | 0.09 | 0.02 | 0.06 | **0.88** |

## 6.2. Structural Model Verification

Structural Equation Modelling (SEM) was conducted using the IBM AMOS 27 software package to test the model. Goodness-of-fit indicators of the measurement model were verified by the SEM methodology. The presented values (Table 4) show that both models are appropriate.

**Table 4:**

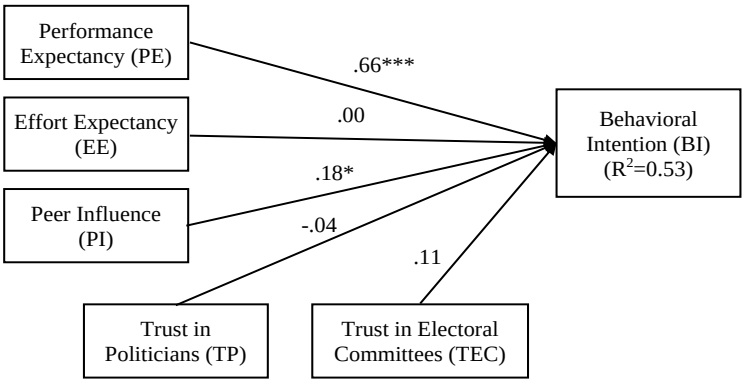
Model goodness-of-fit indicators

| Indicators | Acceptable values | Local level | State level |
|---|---|---|---|
| **$\chi^2$** | | 130.84 | 187.87 |
| **Df** | | 89 | 90 |
| **p** | < 0.05 | 0.003 | 0.000 |
| **Normalized $\chi^2$ ($\chi^2$/df)** | ≤ 3.00 | 1.47 | 2.09 |
| **GFI** | ≥ 0.90 | 0.93 | 0.90 |
| **RMSEA** | ≤ 0.05 or 0.08 | 0.05 | 0.08 |
| **NFI** | ≥ 0.90 | 0.93 | 0.91 |
| **CFI** | ≥ 0.90 | 0.98 | 0.95 |
| **TLI** | ≥ 0.90 | 0.97 | 0.93 |
| **PNFI** | ≥ 0.60 | 0.69 | 0.68 |

Both structural models achieved an appropriate goodness-of-fit. Figure 2 and Figure 3 present the exogenous latent variable direction and strength in relation to the endogenous variables. Structural model analysis at the local level (Figure 2) demonstrates that only PE's impact on BI is significant. PI is also statistically significant ($\beta$L=0.18) and the model explains 53% of i-voting intention variance.

**Figure 2:**

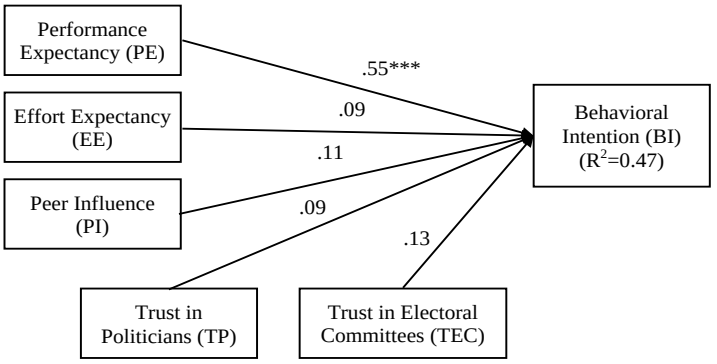
I-voting BI structural model at the local level (n=194, ***p<0.01, **p<0.05, *p<0.1)




The state level findings are similar to the local level findings (Figure 3): PE evidences medium impact, but PI's impact remains unconfirmed. The state level model explains 47% of the BI variance.

**Figure 3:**

I-voting BI structural model at the state level (n=194, ***p<0.01, **p<0.05, *p<0.1)




The unstandardized (B) and standardized (β) regression coefficient values represent statistical significance. PE is the only statistically significant (p<0.01) impact factor on BI in both models, with strengths of βS=0.66 and βL=0.55, respectively.

## 7. Discussion

This is one of the few research studies on the usability of the UTAUT model in relation to trust and i-voting acceptance by citizens. The results of our two study models (local and state), derived in line with the recommendations of extant studies, indicate that domain-adjusted models are suitable for use in i-voting environments (*Table 5).*

**Table 5:**

Research hypotheses

| | | Local | | | State | | | |
|---|---|---|---|---|---|---|---|---|
| **Hypothesis** | **Path** | **β** | **T-value** | **Sig.** | **B** | **T-value** | **Sig.** | **Supported** |
| **H1.** | PE→BI | .66 | .913 | 0.000** | .5 | .913 | 0.000** | Supported |
| **H2.** | EE→BI | -.003 | .913 | .975 | .09 | .913 | .284 | Not supported |
| **H3.** | PI→BI | .18 | .915 | 0.021* | .11 | .909 | .112 | Supported only at the local level |
| **H4.** | TP→BI | -.04 | .886 | .622 | .09 | .871 | .223 | Not supported |
| **H5.** | TEC→B | .11 | .038 | .179 | .13 | .962 | .076 | Not supported |

The authors accepted that i-voting is a specific e-government service and that this context is sensitive and vulnerable enough for us to expect a positive impact of trust in government on i-voting BI in terms of trust issues. Unfortunately, we found that pre-interactional TP and TEC factors, including the institutional attributes of organizational reputation and perceived trustworthiness, do not significantly affect BI.

### 7.1. Hypotheses Verification

**Performance Expectancy** (**PE**) positively impacts BI and **confirms H1**. The respondents expressed a high degree of agreement in relation to the facilitating role of ICT use in election procedures. A higher probability of i-voting turnout was evidenced when compared to traditional voting methods. The digitally native generation lives digitally, values efficiency, and prefers convenient election procedures, including high standards of mobility and speediness when exercising the democratic right to vote (Polyas, 2016). PE is the strongest impact factor at the local and state levels (βS=0.66;

$\beta L=0.55$; $p<0.01$). Our results coincide with previous acceptance studies in the field of i-voting (Agbesi, 2020; Mensah, 2020; Nemeslaki et al., 2016; Powell et al., 2012), although this factor is not similarly significant in the broader context of e-government (Alawadhi & Morris, 2008; Voutinioti, 2013), or among students (Samsudeen & Thelijjagoda, 2015).

**Effort Expectancy (EE)** was found to not impact BI, which **rejects H2.** Similarly, extant study results in demographically comparable environments also vary. Alawadhi and Morris (2008), Nemeslaki et al. (2016), and Agbesi (2020) proved the impact of EE on e-government BI on a comparable population, but Samsudeen and Thelijjagoda (2015) as well as Mensah (2020) rejected its impact. In Powell et al. (2012), the impact on young adults (18–25) was not shown to have a significant impact in terms of i-voting. We can therefore state that the younger population has become more ICT-savvy and that i-voting does not constitute a significant challenge or effort.

**Peer Influence (PI)** is statistically significant but only at the local level ($\beta L=0.18$; $p<0.05$), which **partially confirms H3**. Samsudeen and Thelijjagoda (2015) proved a positive and significant relationship between *Social Influence*, which our PI replaces, and BI to use e-government services for a comparable population. The data appear to corroborate the notion that this population is more predisposed to favor the proximate local environment in relation to democratic processes. More familiarity with local issues and local political office holders engenders belief in the possibility of influencing decisions.

The research hypotheses **H4** and **H5** predicted that the decomposition of *trust in government* to trust in politicians and trust in electoral committees would confirm the impact of trust in government on i-voting BI, which was also assumed by Powell et al. (2012). Despite these assumptions, the results show that neither TP nor TEC significantly affects i-voting BI, so hypotheses **H4** and **H5 are rejected**, similar to the findings of Shareef et al. (2011). Although Berdykhanova et al. (2010) defined *trust in government* as a key i-voting determinant, other factors affecting i-voting BI at the local and state levels must be explored.

Regarding the described decomposition, we introduced the moderator of government level. We have not encountered any case of such an approach thus far. Namely, testing the influence of decomposed trust in government within the same research context (and on the same sample) provides additional comparative value added in i-voting BI research. The existence of statistically significant differences between local and national levels was tested through **H6**. Both models (Table 4) showed a good model fit, indicating the valid strengths of the relations among the factors. PE was confirmed as a stronger predictor of intention to use i-voting on the local level compared to the state level, and PI was shown to be a significant and notable predictor of intention to use i-voting on the local but not the state level. These findings **support** hypothesis **H6** and acknowledge the "*Paradox of distance*" (Eggers et al., 2021).

Our respondents expressed a propensity for i-voting, and this was supported by the significant impact of PE on BI. For curious, young voters without pre-existing user experience, i-voting is obviously a technology worth testing. Because these young voters can be described as "voting abstainers", increased i-voting turnout can be expected according to Petitpas et al. (2021). Trust is not considered a determinant because i-voting is considered to be a more interesting means of political participation and a key factor in decision-making process engagement.

## 7.2. Study Limitations

The UTAUT model was demonstrated to be suitable for our study, but we found that students do not represent the general population, so further research that focuses on the representative population of one country is needed. The appropriate use of populations capable of cognitive response in relation to the surveying procedure may provide compliance with the statistical conditions necessary for result generalization, but as it is questionable whether such generalization is representative of the sentiments of the electorate as a whole, comprehensible questionnaires are required to improve utility.

The definition of *trust in government* was limited to its political aspect, i. e. the politicians and government bodies responsible for administering elections. Even though the current i-voting technology challenges mainly concern security and privacy, i-voting should be discussed in the broader contexts of e-government and e-democracy.

## 7.3. Recommendations for Further Research

Research studies, practitioners, and politicians still have not reached a consensus about the feasibility of credible i-voting. Failed trials and bad practices are the reasons for the passivity of countries in many cases. Future research should therefore address additional i-voting acceptance factors, including the influence of experiences from other countries.

In the year 2021, various alternative scenarios of elections have been implemented to overcome the concerns related to COVID-19. In different countries of the world, at least 79 cases of postponed elections and at least 142 cases of held elections were recorded globally from February 21 until October 21, 2021. As of October 2021, there were still 24 elections on the schedule until the end of 2021 (Asplund et al., 2021). Many countries enabled additional voting channels (early voting, voting by mail) to overcome the troubles. However, Estonia already conducted its 12th internet elections so far in October. At local elections, 46.6% of i-votes were counted out of 587,361 ballots cast (State Electoral Office of Estonia, 2021), which remains on the recent average level of i-voters.

The consequences of the current pandemic include an increase in trust in

government (OECD, 2020), but a slight decline in voter turnout and the growth of the remote (mail-in) voter share opened up a new paradigm for i-voting research. Beside statistical data (Asplund et al., 2021) some recent studies confirmed the significant decrease in turnout in clusters and municipalities more exposed to the pandemic (Fernandez-Navia et al., 2021; Noury et al., 2021). In the absence of scientific research, the discourse on whether COVID-19 is an opportunity to introduce i-voting or not therefore reveals a new field of professional disagreement, where different trust issues remain the main stumbling block. The emerging dilemma of "*How to vote and stay healthy*?" introduces an important topic for consideration in further research on voter participation.

## 8. Conclusion

I-voting is considered a research topic that cannot be discussed enough, and studies generally reveal new findings concerning feasibility and acceptance. New situations, such as the COVID-19 pandemic, also bring new circumstances to the table.

After examining the theoretical background of i-voting, e-government, and trust in government, we examined the factors that impact young Slovenian voters' intention to use i-voting. The study used a UATUT model as a base and extended the model with two factors of trust: trust in politicians and trust in electoral committees. We further compared the impact of different factors on the intention to vote on local and state levels.

The results showed that on both the local and state levels, PE is the only significant factor regarding behavior intention to use i-voting, and together with other factors explains approximately 50% of the variance. Furthermore, on the local level, where closeness has more of an impact, PI is another significant factor. Although previous findings found that EE and trust (in politicians and electoral committees) sometimes significantly impact i-voting behavior intention, our study, focused on young, educated voters, did not. Our decomposition of the determinants of trust in government is therefore instructive for further studies of i-voting acceptance and trials. It is also possible that outcomes would vary if measured over a more varied and representative sample of voters regarding age, education level, and/or even political orientation.

## 9. Implications for Theory and Practice

We deem the introduction of the moderator *Government Level* to our adapted UTAUT model to be the *theoretical novelty* of this study. Despite the fact that the impact of TP and TEC on BI was not proven, statistically supported models at the local and national levels confirmed the moderating influence of the government level. Our results, therefore, attest that the impact of the level and structure of government on i-voting acceptance should consistently be factored in. The evidenced differences in the results confirm the need for the separate treatment of i-voting BI at the local and state levels, both in organizational terms and with respect to political office holders.

The *practical implications* of this study are especially interesting for countries willing to introduce i-voting and should be of interest to decision-makers in i-voting implementation processes. The low level of trust in Slovenia's government evidenced in this study is broadly in line with global trends and confirms the results of extant studies; nevertheless, we proved the impact of governmental level and structure on trust in government. We proved that social influence (i. e. PI) is higher at the local level than at the state level, and this may be due to citizens' daily engagement with their local environment, more familiarity with the local circumstances, and the perceived greater influence on local decision-making. Furthermore, because our findings confirmed that at the local level the model explains 53% of i-voting intention variance (more than on the state level), we suggest that i-voting trials be first implemented at the local level.

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