

# **Factors influencing e-government services adoption intentions among people of Bangladesh: Does e-government service trustworthiness matter?**

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**Abstract:** The main purpose of this study is to understanding and exploring factors that can influence e-government services adoption intentions. Moreover, the study examines how e-government service trustworthiness matters on e-government services adoption intentions among people of Bangladesh. Based on literature review and collection of 389 usable data the study is conducted applied partial least squares structural equation modeling (PLS-SEM), using Smart PLS3.3.3. The results of this study reveal that attitude, social influence, performance expectancy, and e-government services trustworthiness significantly influence e-government services adoption intentions. The study findings also identify that e-government service trustworthiness moderates the strength of relationship between attitude, social influence, performance expectancy, and e-government services adoption intentions.

**Keywords:** Attitude, Social influence, Performance expectancy, E-government services trustworthiness, E-government services adoption intentions, Bangladesh

## **Introduction**

Global expansion of internet with the advancement of information and communications technology (ICT) has driven national development and e-government services development since last two decades (Ullah et al., 2022). The advancement of ICT has enhanced economic, social, and lifestyles (Jover & Díaz-Parra, 2022; Hasan, 2021). ICT is also required for development of e-government services to enhance management efficiency and capability for citizen services (Ariana et al., 2020; Hasan, 2022b). Recently, government authorities and agency have emphasized on e-government services development by recognizing e-government's benefits and ICT innovation (Choi & Chandler, 2020; Biswas et al., 2021). Currently, government administrators in developing countries like Bangladesh have taken e-government principles, focusing on providing online and e-services for their own citizens (Xin et al., 2022). E-government services provide public services responding to public needs, combining many agency services into one-stop services (Bakunzibake et al., 2019; Hasan, 2023a). Thus, the importance of e-government services might be significant for general citizens of Bangladesh.

Electronic government or e-government is consisted of application of information and communication technology (ICT) to provide effective government services to government

agencies, businesses, and citizens (Charalabidis et al., 2019; Hasan, 2022b). Scholars have demonstrated that acceptance or adoption of e-government might have potential advantages for government agencies, businesses, and citizens (Chen & Aklikokou, 2020; Hasan & Rahman, 2023b). However, still, some citizens cannot rely on e-government applications due to online services trust issue. In addition, several scholars have highlighted that despite the importance of e-government services, public reject e-government applications due to fear of e-government applications and online services' trust issues (Abusamhadana et al., 2021; Hasan, 2023b). Therefore, government should understand factors that may influence general citizens' e-government adoption intentions in achieving successful adoption of e-government services. Citizens' attitude, social influence, performance expectancy of e-government services, and e-government trustworthiness are complex issues and few studies have analyzed its' impact on influencing citizens' e-government services adoption intentions in Bangladesh.

In previous studies, behavioral intention is defined as motivational factors that strongly influence to perform the specific behavior. Dedeoglu et al. (2018) define behavioral intentions as signal whether customers remain or leave from the company. Besides Souki et al. (2020) and (Hasan, 2023d) argue that behavioral intention is posited as multidimensional construct, consisting of recommendation, loyalty, and paying a premium price. Thus, e-government adoption intentions can be defined as citizens' willingness to apply and use e-government services for the need of their necessity. According to theory of planned behavior, intentions are determined by individual's attitude, subjective norms, and perceived behavioral control (Hagger et al., 2022; Hasan, 2023c). In addition, the theory of technology acceptance model (TAM) explains that intentions are determined by attitude (Buabeng-Andoh, 2018). Further, Jeon et al. (2018) and (Hasan, 2023e) explain that e-social influence and customers behavioral intentions are positively related towards bed and breakfast website. Moreover, Do Nam Hung et al. (2019) and Mondal & Hasan (2023) discuss that performance expectancy positively related to behavioral intentions towards mobile payment. Based on these discussions, it can be deduced that attitude, social influence, performance expectancy, and e-government trustworthiness are crucial factors of explaining general citizens' e-government adoption intentions in Bangladesh. Besides, earlier studies have shown the connection between attitude and adoption intentions differently. Nawi et al. (2022) define attitude as the total evaluation of outcome with positive or negative aspects of a particular things/objects. Besides, Braun et al.(2018) and Hasan (2021) and Hasan (2024) define attitude as the estimated likelihood of performing a specific task. Based on these definitions, attitude towards e-government can be defined as the favorable or unfavorable evaluation of e-government services in predicting e-government adoption intentions in a similar manner. In previous study, Verkijika & De Wet (2018) explain that attitudes have significant impact on e-government adoption intentions in sub-saharan Africa; Wang et al. (2018) mention that attitude significantly influences bicycles sharing adoption intentions; and Zahid & Haji Din (2019) examine the effect of attitude on e-government services adoption intentions in Pakistan. Further, social influence is caused by the imagined pressure from others, which is also called interpersonal influence (Manca et al.,

2019)(Hasan et al., 2021)(Hasan et al., 2024). Sadri et al. (2021) define social influence as the process by which an individual changes his/her belief, opinions, and thought process due to interactions with other people. Besides, Belanche et al. (2019) define social influence as the degree to which an individual perceives that others' opinions are important for new systems. Based on these definitions, social influence towards e-government can be defined as the individuals' intentional or unintentional change in individual's beliefs, attitudes, or behavior associated with the e-government services applications. Prior studies, where Mensah et al. (2020) examine the effect of social influence on e-government services adoption intentions; Lallmahomed et al. (2017) note that social influence has significant effect on behavioral intentions towards e-government adoption intentions; and Fakhruzzaman & Dimitrova, (2020) explain that social influence is positively related to e-government adoption intentions in Indonesia. Furthermore, performance expectancy refers to the level of an individual's beliefs of using a particular system that helps him/her gaining benefits (Soliman et al., 2019; Hasan & Sabbir, 202). Baabdullah (2018) define performance expectancy as a degree to which a person can accomplish his/her expected activities. Besides, Taherdoost, (2018) argue that performance expectancy encompasses five factors such as perceived ease of use, external motivation, job fit, relative advantage, and outcome. Thus, performance expectancy towards e-government can be defined as the degree to which individual believes that e-government services system help him/ her to attain online government services. Alzahrani et al. (2017) examine the casual relationship between performance expectancy and e-government services adoption intentions among general citizens; Sawalha et al., (2019) explore the effect of performance expectancy on e-government adoption intentions; and Sabani, (2021) explain that performance expectancy is positively related to e-government adoption intentions in Indonesia. Moreover, several studies have shown that citizens' perceptions of trustworthiness has impacts on citizens' e-government services adoption intentions. Featherman et al. (2021) define trustworthiness as perception of confidence in electronic marketers' integrity and reliability. Besides, Janssen et al. (2018) define trustworthiness as the composition of trust in internet and trust of the government. Further, Janssen et al., (2018) argue that trustworthiness encompasses specific entity enabling technology. Based on these definitions, e-government trustworthiness can be defined as the citizen's perceptions of confidence in information and communications technology (ICT)'s reliability and integrity. In previous study, Lallmahomed et al. (2017) explain that government trust and internet trust have significant impacts on behavioral intentions towards e-government; Chen & Aklikokou (2020) note that trustworthiness is an important determining factor influencing e-government adoption intentions; and Zahid & Haji Din (2019) mention that trustworthiness plays a key role in explaining e-government adoption intentions in Pakistan. More precisely, several studies in existing literature have conducted study on factors influencing citizen's e-government adoption intentions, where Witarsyah et al. (2017) and (Hasan & Rahman, 2023a) explain that performance expectancy and social influence have significant impact on behavioral intentions towards e-government; Obaid et al., (2022) note

that personal, technical, and dependability factors significantly influence e-government service adoption intentions; Fakhruzzaman & Dimitrova (2020) examine the impacts of perceived usefulness, perceived ease of use, perceived risk, trust, and social influence on e-government adoption intentions; Lallmahomed et al.(2017) investigate the direct influence of performance expectancy, effort expectancy, social influence, facilitating conditions, and perceived price value on behavioral intentions towards e-government services; Alzahrani et al. (2017) note that trust in e-government (e.g., trust in government and trust in internet) explains e-government adoption intentions; and Verkijika & De Wet, (2018) explain the role of attitude towards e-government adoption intentions. Based on these studies, it can be assumed that there are several factors that influence citizen' e-government services adoption intentions. However, lack of clear understanding of specific factors impacting citizen' e-government adoption intentions in Bangladesh is one of the main motivations for this research.

### **Objectives of the study**

The prime objective of this study is to explore the factors influencing e-government services adoption intentions among people of Bangladesh. However, the study has the following specific objectives as follows.

- I.** To examine the casual relationships between attitude, social influence, performance expectancy, e-government services trustworthiness, and e-government services adoption intentions.
- II.** To measure how e-government trustworthiness matters.

### **Hypothesis statements**

**H1:** Attitude significantly affects e-government services adoption intentions.

**H2:** Social Influence significantly affects e-government services adoption intentions.

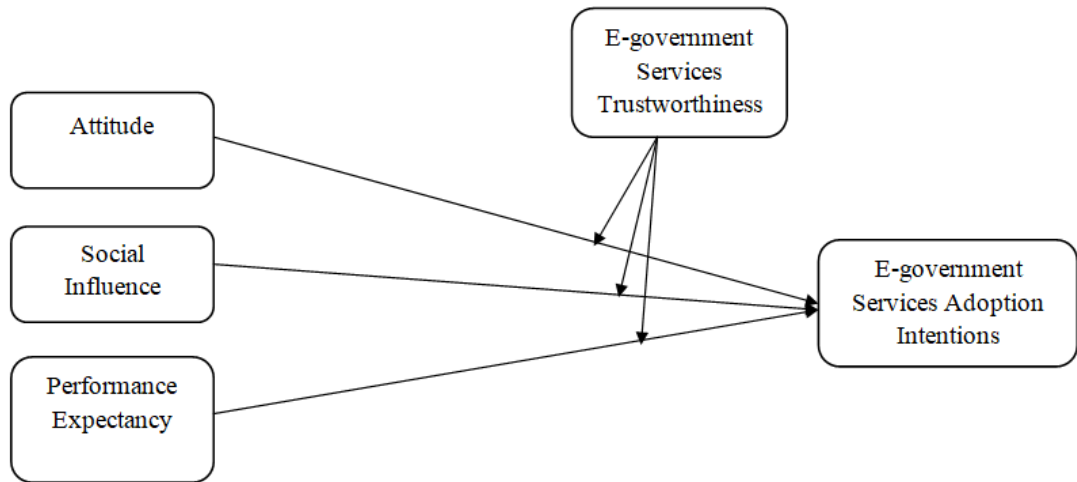
**H3:** Performance expectancy significantly affects e-government services adoption intentions

**H4:** E-government services trustworthiness significantly affects e-government services adoption intentions.

**H4a:** E-government services trustworthiness moderates on the relationship between attitude and e-government services adoption intentions.

**H4b:** E-government services trustworthiness moderates on the relationship between social influence and e-government services adoption intentions.

**H4c:** E-government services trustworthiness moderates on the relationship between performance expectancy and e-government services adoption intentions.



**Figure 1.** Proposed research framework

**Source:** Authors

## **Materials and Methods**

### **Study location**

The study is conducted in Bangladesh among conveniently selected people who permanently reside in Bangladesh and matured enough with age between 18 and 65 years old. Specifically, this study is conducted in the area of Jessore, Barishal, and Patuakhali districts of Bangladesh.

### **Measures**

The study uses existing validated measurement scales and modified to fit into the context. Four measurement items of attitude and four measurement scales of e-government services adoption intentions are adopted from Hasan (2022). Similarly, two measurement items of social influence and three measurement scales of performance expectancy are adopted from Ahmad et al. (2013). Four items suggested by Hussein et al. (2011) are used for explaining e-government services trustworthiness. Importantly, all measurement items of the study is measured using five-point Likert scale, where “1” denotes strongly disagree and “5” denotes strongly agree.

### **Population**

The study considers individuals who are aged between 18 years and 65 years and live in Bangladesh.

### **Sampling technique**

A convenience sampling technique is used to collect data from people who are between 18 years and 65 years in Bangladesh.

### **Data collection**

After the specification of population and sampling technique, the study carries the data collection processes. To carry out the study, four enumerators are appointed and made

cognizant about the concept and purpose of this study. Subsequently, the enumerators distribute the questionnaires among individuals who have age between 18 years and 65 years and live in Bangladesh from November 2023 to December 2023 by two months.

### **Data analysis**

Using two-step approach suggested by Anderson & Gerbing, (1988), the confirmatory factor analysis (CFA) is conducted to verify the validity of the measurement scales and structural equation modeling (SEM) is analyzed for testing hypothesized relationships among the constructs using smart PLS 3.3.3.

### **Result Analysis**

The demographic properties of the respondents presented in Table I represent that 54.75 % (n = 213) are male and 45.25 % (n = 176) are female. In case of age, 32.39% (n=126) belong the age between 18 and 30 years, 42.41% (n=165) belong the age between 31 and 50 years, and rest 25.20% (n=98) belong the age between 51 and 65 years old. In terms of income level of BDT, 34.71% (n=135) earn below 30000 taka per month, 37.78% (n=147) earn in the between 30000 and 60000, and rest 27.51% (n=107) earn above 60000 per month. In describing marital status, 24.42% (n=95) are single, 59.89% (n=233) are married, and rest 15.67% (n=61) are divorced or widowed. In education level, 37.01% (n=144) are undergraduate and 62.99% (n=245) have graduation or above degree.

**Table I.** Demographic profile of respondents (n = 389)

**Source:** Authors

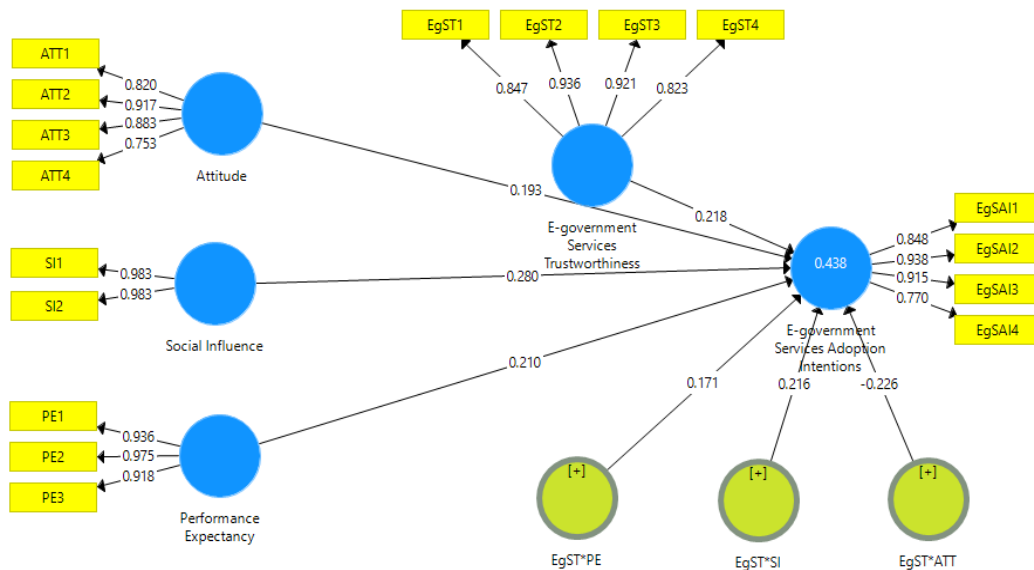
Variable	n	Percentage (%)
Gender		
Male	213	54.75
Female	176	45.25
Age (years)		
18 to 30	126	32.39
31 to 50	165	42.41
51 to 65	98	25.20
Monthly income (BDT)		
Below 30000	135	34.71
30000-60000	147	37.78
Above 60000	107	27.51
Marital status		
Single	95	24.42
Married	233	59.89
Divorced/widowed	61	15.67
Education level		
Undergraduate	144	37.01
Graduate or above	245	62.99

### **Results of measurement model**

To examine the reliability and validity of the measurement items, the authors perform CFA whereby each measurement items are allowed to load only on its specified construct and be

correlated with one another. The results of measurement model presented in Table II represent that the Cronbach's alpha values of all constructs range between 0.892 and 0.965; and the composite reliability values of all constructs span between 0.909 and 0.983. Thus, all constructs of the measurement model have achieved reliability since the recommended threshold is 0.70 (Hair, 2009). To verify the validity of all constructs of the measurement model, factor loadings and average variance extracted (AVE) are evaluated. The Table II shows that items' loadings span from 0.753 to 0.983 which is greater than the recommended threshold of 0.70 (Hair Jr et al., 2014). The AVE values of all constructs are presented in Table II as 0.715 to 0.966 greater than the suggested value of 0.50 (Nunnally, 1994).

To verify the construct discriminant validity, the square root of AVE is compared to the each construct's AVE. Table III shows that each construct's AVE is smaller than the square root of AVE. Thus, the measurement model has achieved the adequate level of discriminant validity (Hair Jr et al., 2014).



**Figure 2. Measurement model**

**Source: Authors**

**Table II.** Measurement model results

**Source:** Authors

Constructs/Items	Outer loadings	Cronbach's alpha ( $\alpha$ )	Composite reliability (CR)	Average variance extracted (AVE)
<b>Attitude</b>				
Using e-government services is wise decision.	0.820			
Using e-government services is a good decision.	0.917	0.866	0.909	0.715
Using e-government services is sensible.	0.883			
Using e-government services is rewarding.	0.753			
<b>Social Influence</b>				
I get more prestige by using e-government services.	0.983			
People who are important to me suggest using it.	0.983	0.965	0.983	0.966
<b>Performance Expectancy</b>				
E-government services perform quick task completion.	0.936			
E-government services save time.	0.975	0.938	0.960	0.890
E-government services are easy to contact.	0.918			
<b>E-government Services Trustworthiness</b>				
I think I can trust e-government services.	0.847			
Our e-government services can be trusted to carry out any sort of transactions.	0.936			
I trust our e-government services to keep my best interests in mind.	0.921	0.905	0.934	0.780
In my opinion, our e-government services are trustworthy.	0.823			



**E-government Services Adoption Intentions**

I intend to use e-government services in the future.	0.848			
I will always try to use e-government services in my daily life.	0.938	0.892	0.925	0.757
I plan to use e-government services frequently.	0.915			
I have planned to use e-government services for task completion next time.	0.770			

**Table III.** Results of discriminant validity and collinearity

**Source:** Authors

	ATT	SI	PE	EgST	EgSAI
ATT	<b>0.845</b>				
SI	0.155	<b>0.983</b>			
PE	0.270	0.168	<b>0.943</b>		
EgST	0.176	0.361	0.377	<b>0.883</b>	
EgSAI	0.300	0.388	0.364	0.480	<b>0.870</b>

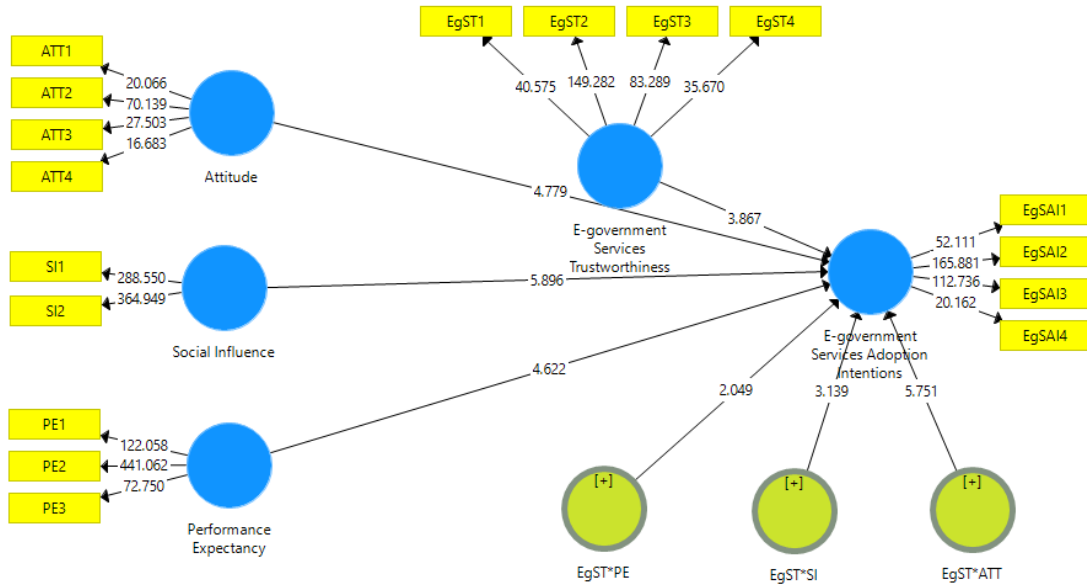
**Notes:** ATT = Attitude, SI = Social influence, PE = Performance expectancy, EgST = E-government Services Trustworthiness, EgSAI = E-government Services Adoption Intentions

**Results of structural model**

The study has examined the hypothesized relationships among the variables through *path* coefficients, *T*-statistics, and *P*-value. Table IV describes that attitude is significantly related to e-government services adoption intentions (H1) ( $\beta = 0.193, t = 4.779, p = 0.000$ ), supporting *H1*. The strength of relationship between social influence and e-government services adoption intentions (H2) is found significant ( $\beta = 0.280, t = 5.896, p = 0.000$ ), which supports *H2*. Further, performance expectancy significantly influences e-government services adoption intentions (H3) ( $\beta = 0.193, t = 4.779, p = 0.000$ ), and thus, it supports *H3*. Furthermore, the relationship between e-government services trustworthiness and e-government services adoption intentions is found significant (H4) ( $\beta = 0.218, t = 3.867, p = 0.000$ ), which supports *H4*.

The study also examines the moderating role of e-government services trustworthiness, where Table IV shows that attitude multiplied with e-government services trustworthiness significantly influences e-government services adoption intentions (H4a) ( $\beta = -0.226, t = 5.751, p = 0.000$ ), supporting *H4a*. Moreover, the multiplied interaction of social influence and e-government services trustworthiness has significant influence on e-government services adoption intentions (H4b) ( $\beta = -0.216, t = 3.139, p = 0.002$ ), and thus, it supports *H4b*.

Furthermore, performance expectancy multiplied with e-government services trustworthiness is found significantly related to e-government services adoption intentions ( $H4c$ ) ( $\beta= 0.171, t= 2.049, p = 0.041$ ), which supports  $H4c$ .



**Figure 3. Structural model**  
**Source: Authors**

**Table IV. Path coefficients and hypothesis testing**

**Source: Authors**

Hypothesis	Relationships	Beta	T-Statistics	P-Values	Decisions
H1	Attitude -> E-government Services Adoption Intentions	0.193	4.779	0.000	Supported
H2	Social Influence -> E-government Services Adoption Intentions	0.280	5.896	0.000	Supported
H3	Performance Expectancy -> E-government Services Adoption Intentions	0.210	4.622	0.000	Supported
H4	E-government Services Trustworthiness -> E-government Services Adoption Intentions	0.218	3.867	0.000	Supported
H4a	EgST*ATT -> E-	-0.226	5.751	0.000	Supported

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	government Services Adoption Intentions				
H4b	EgST*SI -> E-government Services Adoption Intentions	0.216	3.139	0.002	Supported
H4c	EgST*PE -> E-government Services Adoption Intentions	0.171	2.049	0.041	Supported

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### **Discussions and Conclusions**

The study has left several theoretical and practical implications which are helpful for general people and government of Bangladesh

#### **Theoretical implications**

Several existing studies have demonstrated that attitude has significant influence on behavioral intentions (Zeweld et al., 2017;Troise et al., 2021). However, the current study has uniquely explained that attitude significantly affects e-government services adoption intentions. Further, several studies (Muangmee et al., 2021;Zeweld et al., 2017) have explained that social influence significantly influences behavioral intentions. However, the current study has uniquely explained that social influence, performance expectancy, and e-government services trustworthiness strongly influence e-government services adoption intentions among Bangladeshi citizens. Furthermore, the current study has uniquely contributed to e-governance literatures by identifying the strong moderating of e-government services trustworthiness on the relationships between attitude, social influence, performance expectancy, and e-government services adoption intentions among general citizens of Bangladesh.

#### **Practical implications**

Along with the theoretical implications, the study suggests several practical implications. First, government should tailor a public program that can make positive attitude towards e-government services adoption intentions. Second, Government should enhance social interactions and performance that might influence citizen's e-government services adoption intentions. Finally, government should improve trust of e-government services that intervene on the relationship between attitude, social influence, performance expectancy, and e-government services adoption intentions.

#### **Limitations and future research**

Although the current study has several theoretical and practical implications, the study is not beyond of research restrictions. First, the current study collected data for a specific period, while future studies can use a longitudinal research approach. Second, current study has explained e-government services adoption intentions in terms of attitude, social influence, performance expectancy, and e-government services trustworthiness, while future studies can adopt more other variables such as personal norms and social norms. Finally, current study has conducted a quantitative study, while future studies can conduct an exploratory or qualitative study.

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