

Research article

The electronic government implementation model in the Republic of Korea based on the theory of planned behavior TPB

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Abstract: This paper explains that the theory of planned behavior is a theoretical framework that explains the factors that affect the intention of the person which will affect his behavior. These factors are the attitude toward the behavior, the subjective norm, and the perceived behavioral control. Ajzen depended on Bandura's self-efficacy theory which changed it to the perceived behavioral control. That tells more about the capability of the individual from the available resources and the possibilities of him to be able to proceed with a behavior. The research objective deals with the fact that Ajzen (1991) criticizes the technology acceptance model TAM theory applied in social science, he said that it does not provide the extendibility element in the research that needs to explain more about the usefulness elements. Therefore, other researchers advocated for the implantation of the TPB theory of planned behavior to be able to apply the extendibility element in the research of the electronic government field. In the domain of explaining human behavior the theory of planning behavior indicates a good direction in this field of explaining and understanding human behavior. Recently, technology has become a main factor in social science, here to discuss the government to citizens providing services G2C electronic government initiatives. Most of the research depends on the technology acceptance model TAM, and UTAT theories to explain the effect of the technology in the electronic government implementation. Most of the research about the Republic of Korea' electronic government implements the technology acceptance model TAM theory and other theories. The results indicate that most foreigners are very familiar with the internet in their home countries more than they are with the electronic government in their home countries. Therefore, the Republic of Korea' lifestyle made foreigners more familiar with the electronic government portal. The last general question is about whether to use the electronic government portal in Republic of Korea or not according to the yes or no answers are 78%, 22%.

Keywords: theory of planned behavior (TPB); perceived behavioral control; subjective norms; attitude; trust; intention; behavior; perceived ease of use (PEU); perceived usefulness (PU); electronic government; Republic of Korea' foreigners

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1. Introduction

This paper focuses on the theoretically applied models. Presenting the intention to use the electronic government portal in the Republic of Korea as an easy way to get connected with the government. The electronic government application behavior concept is a tested model according to the TPB theory of planned behavior model. The first part of this paper explains the TPB theory model. Ajzen criticizes the technology acceptance model TAM theory applied in social science, he said that it does not provide the extendibility element in the research that needs to explain more about the usefulness elements. Ajzen, 1991 Therefore, researchers like Barki and Benbasat advocated for the implantation of the TPB theory of planned behavior to be able to apply the extendibility element in the research of the electronic government field. In the domain of explaining human behavior the theory of planning behavior indicates a good direction in this field of explaining and understanding human behavior. Recently, technology has become a main factor in social science, here to discuss the government to citizens providing services G2C electronic government initiatives. Most of the re-search depends on the technology acceptance model TAM, and UTAT theories to explain the effect of the

technology in the electronic government implementation. Most of the research about the Republic of Korea' electronic government implements the technology acceptance model TAM theory and other theories

2. Research theoretical framework

2.1 The Planned Behavior Theory Explanation

According to (Ajzen, 1991) the theory of planned behavior is a theoretical framework that explains the factors that affect the intention of the person which will affect his behavior. These factors are the attitude toward the behavior, the subjective norm, and the perceived behavioral control. Ajzen depended on the theory of self-efficacy (Bandura, 1982, 1991) that changed it to the perceived behavioral control. That explains more about the capability of the individual from the available resources and the possibilities of him to be able to proceed with a behavior. The subjective norm is about the context of the society where the individual should or must do certain reactions to the accidents that occur and those norms could make certain behaviors from the individual predictable within a society's known context. The attitude toward the behavior of the individual that affects the choice and the action of the person depends on his characteristics and personal differences. Figure 1 shows the theory of planned behavior according to Ajzen (1991).

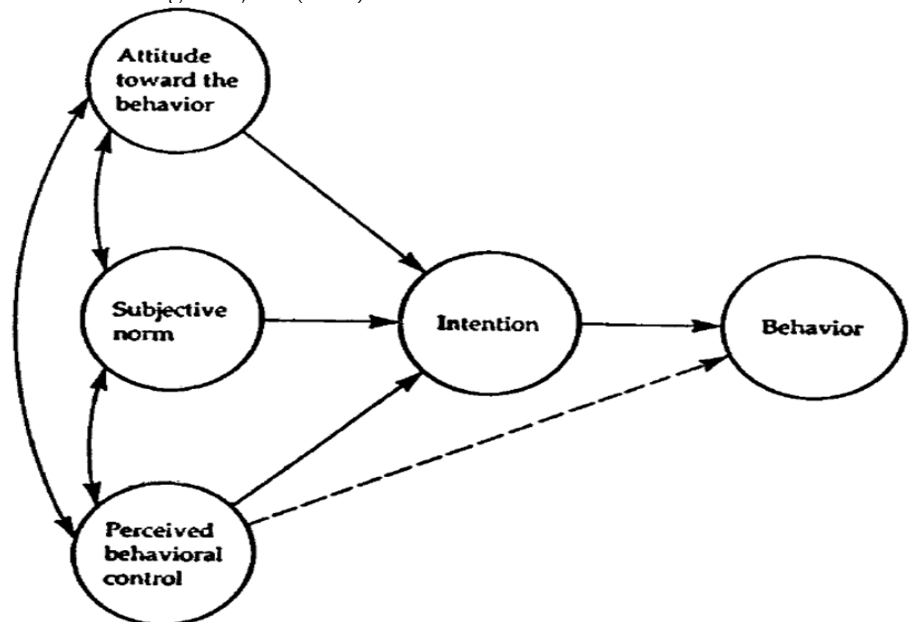


Figure 1. The theory of planned behavior (Ajzen, 1991).

Meanwhile, there are differences between individualistic and collective cultures, the subjective norm that affects personal behavior depends on the cultural context within which the country he belongs. The first one appears more in Western countries and the latter is more familiar in Asian countries where the family ties are stronger which affects the person's actions. In Bresnahan et al., 2007 study among American Japanese, and Republic of Korean students regarding the willingness to blood donation among the students, the study found that only 17% in Korea, 77% in America, and 61% in Japan are willing to donate. The main idea from this study is that the cultural aspect that the TPB theory was framed according to the Western culture more than any other different society Ke Zhang's (2018).

2.2 The Theory Applying Reason

Sevgi Ozkan and Irfan Emrah Kanat are researchers who applied the Ajzen theory of planned behavior in their paper "E-Government adoption model based on theory of planned behavior: Empirical validation" They analyzed the TPB model and conducted empirical studies to validate the model to be able to use in the e-government research field. "Model development Theory of planned behavior is a theory in social psychology explaining human behavior defined in context (Ajzen, 1991). The TPB model has two layers: predictor constructs and salient beliefs. The predictor constructs are the main constructs of the TPB

which are preceded by salient beliefs specific to the behavior in question.” Ozkan, Irfan (2011). Figure 2 shows the theory of planned behavior with the three beliefs that affect the norms.

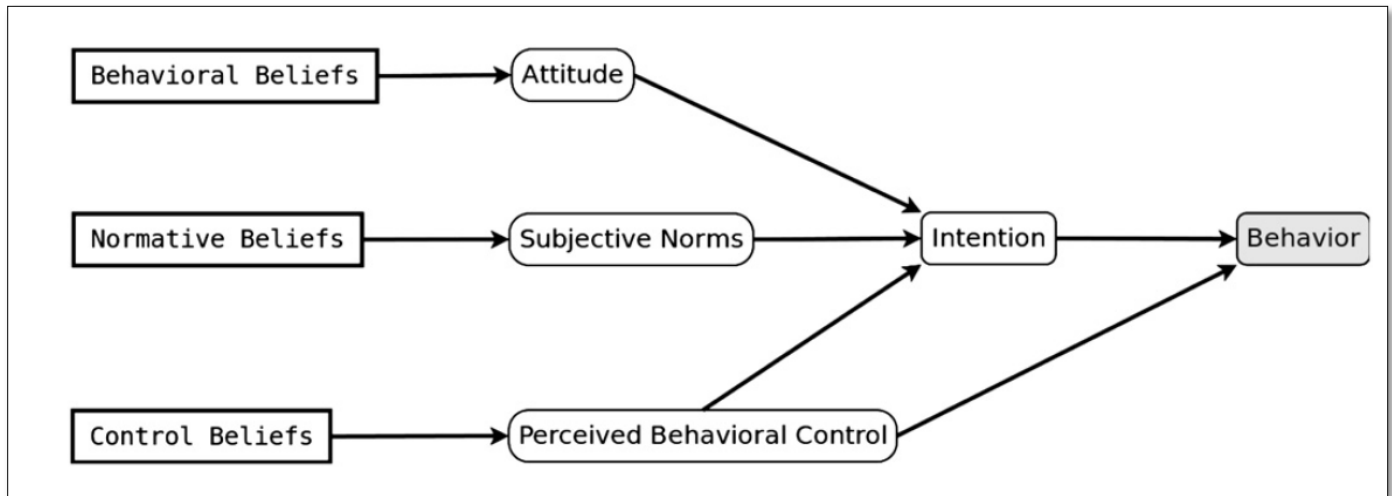


Figure 2. Theory of planned behavior with the three beliefs that affect the norms (Ajzen, 1991).

Meanwhile, Ajzen criticizes the technology acceptance model TAM theory applied in social science, he said that it does not provide the extendibility element in the research that needs to explain more about the usefulness elements. (Ajzen, 1991) Therefore, researchers like Barki and Benbasat advocated for the implantation of the TPB theory of planned behavior to be able to apply the extendibility element in the research of the electronic government field. In the domain of explaining human behavior the theory of planning behavior indicates a good direction in this field of explaining and understanding human behavior. Recently, technology has become a main factor in social science, here to discuss the government to citizens providing services G2C electronic government initiatives. Most of the research depends on the technology acceptance model TAM, and UTAT theories to explain the effect of the technology in the electronic government implementation. Most of the research about the Republic of Korea’ electronic government implements the technology acceptance model TAM theory and other theories.

This research applies the TAM and the TPB planning behavior theories. This would be the first time to implement in the field of electronic governments the attention, attitude, and behavior of the users through the TPB. For more understanding about the behavior and the intention of use of the electronic governmental websites. The reason behind applying the two theories is the clear explanation from the survey outcome conducted in Republic of Korea among Korean citizens and foreign residents in Republic of Korea about their level of use and understanding the electronic services. Therefore, this research paper would be the first to fill the gap in the literature review about how social norms, perceived behavior control, and trust factors affect positively or negatively the use of electronic services through governmental portals and websites. Most of the research in Korean literature used the theory of planned behavior in marketing, health, robotics, and the advertisement field (Choe et al., 2022; Kim & Hwang, 2022; Lee et al., 2018; Lee, 2006; Lee & Shin, 2022).

3. Materials and Methods

3.1 Research design and participants

This paper focuses on the theoretically applied models. Presenting the intention to use the electronic government portal in the Republic of Korea as an easy way to get connected with the government. The electronic government application behavior concept is a tested model according to the TPB theory of planned behavior model. The first part of this paper explains the TPB theory model. The third paper of this thesis is about e-participation and the governance and digitalization of the Republic of Korean citizens in a qualitative study. Followed by this paper is a quantitative study. To be able to examine the validity of the theories used in theory depends on the Stata BE version 18 program for students. The total survey questions are seventy-seven questions: ten questions are general questions, thirty questions are about TPB theory from question number 11 to question 40, and thirty-seven



questions for TAM theory from question 41 to question 77. The total respondents are twenty-seven participants. The survey was distributed for two months from the end of July to September 2023 through the Tally survey websites. The participants received the survey through Facebook, What's Up, Kakotalk, Twitter (X), Instagram, and LinkedIn platforms. The participants consist of both International and Korean people. They responded to both the Theory of planned behavior (TPB) and the theory of the Technology acceptance model (TAM) which were about seventy-seven questions.

Table 2. Respondents' Profile.

Category	Variable	Percentage
Gender	Male	36%
	Female	64%
Age	18-29	19%
	30-39	70%
	40-49	11%
	50-60	0%
	above 60	0%
	Secondary	0%
Education	Bachelor	7%
	Master	60%
	PhD	33%
Occupation	Student	26%
	Employee	52%
	Researcher	11%
	Business owner	7%
	Retired	4%
Familiarity with the Internet in Republic of Korea	Very familiar	59%
	Fairly familiar	37%
	Familiar	4%
	Not familiar	0%
	Not living in the Republic of Korea	0%
Familiarity with the Internet in your home country	Very familiar	59%
	Fairly familiar	26%
	Familiar	11%
	Not familiar	4%
	Not applicable	0%
Familiarity with e-government in Republic of Korea	Very familiar	30%
	Fairly familiar	33%
	Familiar	26%
	Not familiar	7%
Familiarity with e-government in your home country	Not applicable	4%
	Very familiar	23%
	Fairly familiar	44%
	Familiar	22%
	Not familiar	4%
Use of e-government portal	Not applicable	7%
	Yes	78%
How many years are you living in Republic of Korea?	No	22%
	Korean citizen	15%
	Foreigner less than 3 years	11%
	Foreigner 5 years	52%
	Foreigner 10 years	11%
	Foreigners above 10 years	11%

This part will discuss the results of the survey data collection. Firstly, this part will begin with a discussion about the survey participants' profile analysis results. Therefore, one can get more information about the participant's age, gender, education, occupation, and the number of years they stayed in the Republic of Korea in case of the foreign residents. This survey

questionnaire was distributed to both Korean citizens and foreigners who have lived or living in the Republic of Korea for less than three years, more than five years, or more than ten years of staying. In addition, the survey questions contained information about the familiarity of the respondents with internet use in the Republic of Korea and their home country case of foreign residents. Not only about internet familiarity but also about the familiarity with the electronic government in the Republic of Korea and the home country's electronic government in the case of foreign respondents. The last general question is about whether to use the electronic government portal in the Republic of Korea or not.

The results of the survey respondents' profile are for the first age group between 18~29 and 19%, and second age group between 30~39 70%, and the third age group between 40~49 11%, however for the fourth and fifth age groups from 50 and 60 years old no one participated in the survey for the participant's age. For the participants' gender, the male participants are 36%, while the female participants are 64%. For the education question, the participants were distributed into five groups categorially from the Secondary, Diploma, Bachelor, and Master, until Ph.D. degrees 0%, 0%, 7%, 60%, and 33% respectively in order. For the occupation question, the participants were distributed into five groups of Student, Employee, Researcher, Business owner, and Retired: the results are in respective order 26%, 52%, 11%, 7%, and 4%. That has a meaning that the employees are the group who are using the electronic government portal. Master's degree holders followed by Ph.D. holders are the group who are using electronic governmental websites.

This survey questionnaire was distributed to both Korean citizens and foreigners who are living or living in Republic of Korea, For the number of years staying case of the foreigner residents: Korean Citizen, Foreigner less than 3 years, Foreigner 5 years, Foreigners 10 years, and Foreigners above 10 years. The results are respectively 15% for the Korean citizens, 11%, 52%, 11%, 11%. Most participants in this survey were from the group of foreigners who had lived in Republic of Korea for five years which made them residents according to the law of immigration if they obtained the required points. In addition, the survey questions contained information about the familiarity of the respondents according to this scale a 1-5 Likert scale (1= Very Familiar, 5=not applicable or not living in Republic of Korea) used, about the internet in Republic of Korea and their home country in case of the foreigners' residents. The respondents for these choices: Very Familiar/ Fairly familiar/ Familiar/ Not-familiar/ Not living in Republic of Korea in case of foreigners who left or Korean people who are living abroad. The results are respectively in the following order 59%, 37%, 4%, 0%, 0%: that means the biggest portion goes for the very familiar with the internet in Republic of Korea 59%, while no one is not familiar. Not only about internet familiarity but also about familiarity with the electronic government in Republic of Korea according to this scale Very Familiar/ Fairly familiar/ Familiar/ Not-familiar/ Not applicable, the results are in respective order: 30%, 33%, 26%, 7%, 4%. That is a good result that indicates 30% are very familiar with the electronic government in Republic of Korea and 33% are fairly familiar too. In the case of a foreigner's respondents to the home country's electronic government according to this scale Very Familiar/ Fairly familiar/ Familiar/ Not-familiar/ Not applicable, the results are in respective order: 22%, 44%, 22%, 4%, 7%. That indicates that most foreigners are fairly or normally familiar with the internet in their home countries. They are more familiar in Republic of Korea. For foreigner respondents to the home country's internet according to this scale Very Familiar/ Fairly familiar/ Familiar/ Not-familiar/ Not applicable, the results are in respective order: 59%, 26%, 11%, 4%, 0%. That indicates that most foreigners are very familiar with the internet in their home countries more than they are with the electronic government in their home countries. Therefore, the Republic of Korea's lifestyle made foreigners more familiar with the electronic government portal. The last general question is about whether to use the electronic government portal in the Republic of Korea or not according to the yes or no answers are 78%, 22%.

3.2 Hypothesis testing

According to (Ajzen, 1991) the Predictor constructs consist of behavior that is directly connected to the intentions of the person and his actual behavior that are influenced by the attitudes of his personality, the subjective norms of the society where he is dealing, and the perceived behavior control that are his capacities. Therefore, Intentions, Attitudes, Subjective Norms, and perceived behavior control are the prediction of behavior elements. This part of the hypothesis and hypothesis explanation and the survey questions are based on Kanat, I. E., (2009). The thesis of Kanat, I. E., (2009). e-government adoption model based on the theory of planned behavior: an empirical investigation, a thesis submitted to the graduate

school of informatics Institute of the Middle East Technical University. Figure 3 demonstrates the tested model by Ifran based on the TPB of Ajzen (1991), where PU stands for Perceived Usefulness, TG – Trust in Government, PEU = Perceived Ease of use, TI = Trust in Internet.

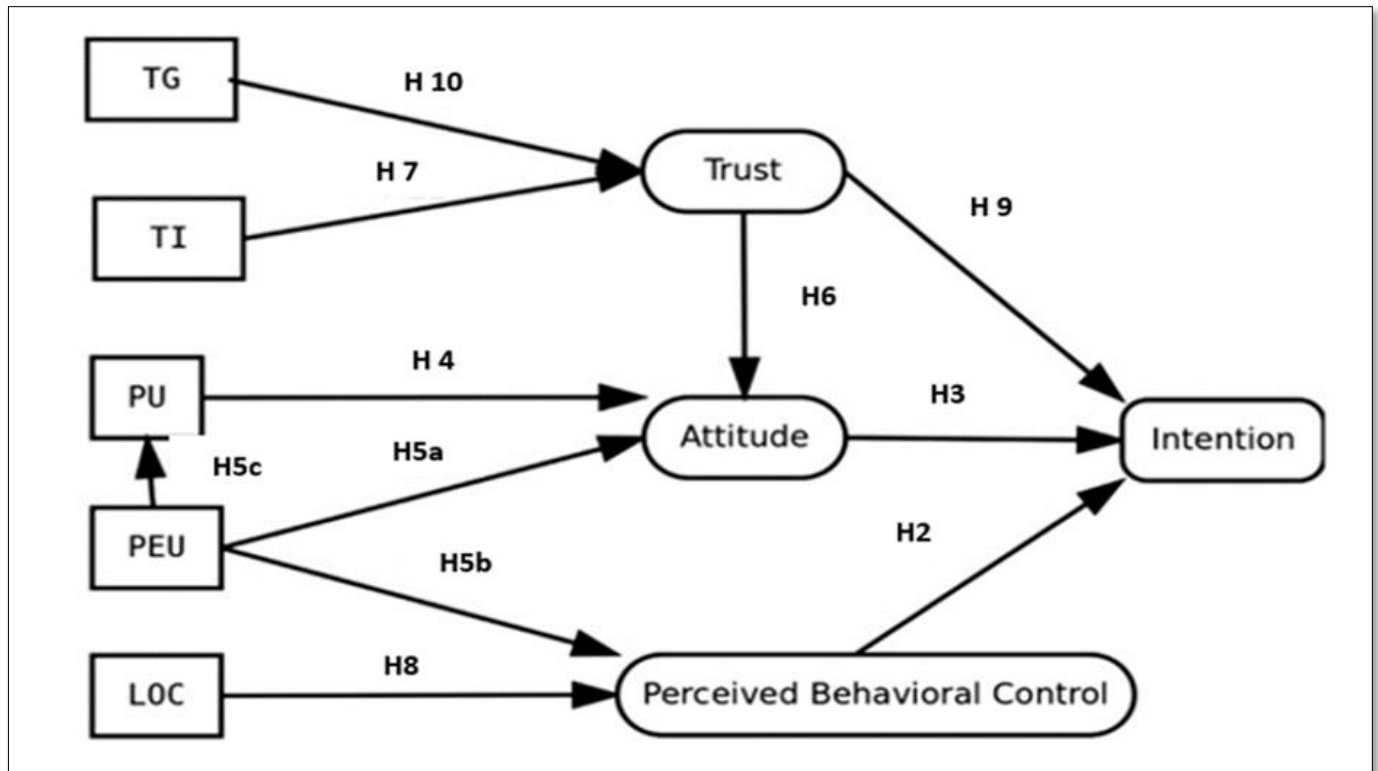


Figure 3. The tested model by Ifran based on the TPB of Ajzen.

According to (Ajzen, 1991) the Predictor constructs consist of behavior that is directly connected to the intentions of the person and his actual behavior that are influenced by the attitudes of his personality, the subjective norms of the society where he is dealing, and the perceived behavior control that are his capacities. Therefore, Intentions, Attitudes, Subjective Norms, and perceived behavior control are the prediction of behavior elements. This part of the hypothesis and hypothesis explanation and the survey questions are based on Kanat, I. E., (2009). The paper of Kanat, I. E., (2009). e-government adoption model based on theory of planned behavior: empirical investigation, a thesis submitted to the graduate school of informatics Institute of the Middle East Technical University.

Therefore, based on the literature review and findings the certain research gaps, we can formulate the following hypotheses of the research:

H1 Intention to use will have a positive influence on the actual use of the service.

H2 Perceived behavioral control over using an e-government service positively influences the intention to use the service.

H3 Attitude toward using an e-government service positively influences the intention to use the e-Government service.

According to Ajzen (1991), the salient beliefs in TPB provide the researchers with the ability to investigate the relevant factors and their effects on the behavior. Three types of these salient beliefs each pertaining to a higher-level construct exist: behavioral beliefs influencing attitudes, normative beliefs influencing the subjective norms, and control beliefs influencing the PBC.

H4 Perceived Usefulness of an e-government service will have a positive effect on the attitude toward the use of e-government service.

H5a Perceived ease of use of an e-government service will have a positive effect on the attitude toward the use of e-government service.

H5b Perceived ease of use of an e-government service will have a positive effect on the perceived behavioral control of the e-government service.

H5c PEU will have a positive effect on the PU of the e-Government services.

H6 Trust will have a positive effect on the attitude toward the use of e-Government



services.

H7 TI will have a positive effect on trust.

H8 Local factors will have a positive effect on the PBC to use the e-government service.

H9 Trust will have a positive effect on the intention to use the e-Government service.

H10 TG will have a positive effect on the trust.

Table 1 gives the hypotheses description.

Table 1. Hypothesis Descriptions.

Hypotheses	Description
H1. Intention to use will have a positive influence on the actual use of the service.	Intentions capture the motivational factors that drive a person to perform a behavior. This first hypothesis of the model was omitted later because measuring the actual performance of behavior required a longitudinal study. Yet the role of intentions on actual performance has been reported to be a strong predictor of actual usage (Irfan, 2011).
H2. Perceived behavioral control over using an e-Government service positively influences the intention to use the service.	The actual behavior control of the person in Republic of Korea enables him to use the available resources to use the electronic government websites and portals.
H3. Attitude toward using an e-government service positively influences the intention to use the e-government service.	It aims to measure the willingness of the Korean people the use the electronic portal to obtain services, on their attitude toward previous experiences or images about the e-portal usage experience.
H4. The Perceived Usefulness of an e-government service will have a positive effect on the attitude toward the use of e-government service.	It aims to measure how the person thinks about the usefulness of using the websites to obtain a service, whether it is providing more quality, less time, or access to more information.
H5a. Perceived Ease of use of an e-government service will have a positive effect on the attitude toward the use of e-government service.	It aims to measure how the person thinks about the ease of using the websites to obtain a service, whether it is providing more quality, less time, or access to more information.
H5b. Perceived Ease of use of an e-Government service will have a positive effect on the perceived behavioral control of the e-Government service.	It aims to measure how the person thinks about the ease of using the websites to obtain a service, whether it is providing more quality, less time, or access to more information. That will drive him to obtain the electronic facilities to be able to use the e-services.
H5c. PEU will have a positive effect on the PU of the e-Government service.	It aims to measure how the person thinks about the ease of using the websites to obtain a service, whether it is providing more quality, less time, or access to more information. That will affect his opinion positively on the Perceived Usefulness.
H6. Trust will have a positive effect on the attitude toward the use of e-government services.	It aims to measure the level of trust in the attitude of the users of the electronic services.
H7. TI will have a positive effect on trust.	It aims to measure the level of trust in the attitude of the users of the electronic services. Whether it depends on the level of the person's trust in the internet connection safety toward the citizen through the electronic portals.
H8. Local factors will have a positive effect on the PBC's use of the e-government service.	It aims to estimate how access to the internet and the individual's ability to use the internet will affect the actual behavior control of the person in Republic of Korea enabling him to use the available resources to use the electronic government websites and portals.
H9. Trust will have a positive effect on the intention to use the e-government service.	It aims to measure the level of trust in the attitude of the users of the electronic services. Whether it depends on the level of the person's trust in the government services toward the citizen through the electronic portals and internet connection safety. Therefore, that level of trust will affect the intention of use.



H10. TG will have a positive effect on the trust (Ozkan & Kanat, 2011). It aims to measure the level of trust in the attitude of the users of the electronic services. Whether it depends on the level of the person's trust in the government services toward the citizen through the electronic portals and internet connection safety. Therefore, that level of trust will affect the intention of use.

4. Data analysis and findings

4.1 Hypothesis Regression

H2 Perceived behavioral control over using an e-government service positively influences the intention to use the service. Table 3 is related to explanation of Hypothesis H2.

Table 3. Hypothesis H2.

Source SS	df MS	Number of obs	=	34
	F(4, 29)	=	9.70	
Model 12.5220856	4 3.1305214	Prob > F	=	0.0000
Residual 9.36026732	29 .322767839	R-squared	=	0.5722
	Adj R-squared	=	0.5132	
Total 21.8823529	33 .663101604	Root MSE	=	.56813

int1iamplanningtousehewe	Coefficient	Std. err.	t	P>t	[95% conf. interval]
int2iwilltrytousehewe	.8814186	.2199682	4.01	0.000	.4315331 1.331304
int4iwouldliketousehewe	-.0690449	.2160657	-0.32	0.752	-.5109489 .3728591
pbclihavethemeanstoobtain	-.0929714	.1117486	-0.83	0.412	-.321523 .1355801
pbc2itisuptometoobtaininf	-.1964965	.1379476	-1.42	0.165	-.4786311 .085638
_cons	1.815676	.7174586	2.53	0.017	.3483087 3.283044

The above table of the regression indicates the correlation between the two variables in hypothesis one H2. The r-squared is 0.572, and the p-value is less than 0.5. Correlation is significant at the 0.000 level (2-tailed). The value of Sig (root means) is 0.5681. According to the Correlation test, there is a strong positive relationship adj R-squared (0.513) between technical factors and usefulness, therefore we reject the null hypothesis.

H3 Attitude toward using an e-government service positively influences the intention to use the e-government service. Table 4 shows the verification of hypothesis H3.

Table 4. Hypothesis H3.

Source SS	df MS	Number of obs	=	34
	F(7, 26) =	6.29		
Model 13.7573119	7 1.96533027	Prob > F =		0.0002
Residual 8.12504102	26 .312501578	R-squared =		0.6287
	Adj R-squared =	0.5287		
Total 21.8823529	33 .663101604	Root MSE =		.55902

int1iamplanningtousehewe	Coefficient	Std. err.	t	P>t	[95% conf. interval]
int2iwilltrytousehewe	.3432817	.2685416	1.28	0.212	
int3iamconsideringusingthe	.5011012	.2402988	2.09	0.047	
int4iwouldliketousehewe	.1166035	.2336225	0.50	0.622	-.2087135 .8952768
att1ithinkusingwebsites	.3157632	.4944826	0.64	0.529	.0071599 .9950425
att2usingittoobtaininformat	-.1114661	.4919512	-0.23	0.823	-.3636144 .5968214
att3ithinkusingwebsites	-.3891134	.2469149	-1.58	0.127	-.7006603 1.332187
att4usingwebsites	.1511588	.1808284	0.84	0.411	-.122686 .8997542
_cons	.1054202	.9871856	0.11	0.916	-.8966542 .1184274

The above table of the regression indicates the correlation between the two variables in hypothesis one H3. The r-squared is 0.628, and the p-value is less than 0.5. Correlation is significant at the 0.002 level (2-tailed). The value of Sig (root means) is 0.559. According to the Correlation test, there is a strong positive relationship adj R-squared (0.5287) between attitude and the intention to use the e-government service, therefore we reject the null hypothesis.

H4 Perceived Usefulness of an e-government service will have a positive effect on the attitude toward the use of e-government service. Table 5 verifies hypothesis H4.



Table 5. Hypothesis H4.

Source SS	df MS	Number of obs	=	34
F(5, 28)	=		37.29	
Model 9.94717794	5	1.98943559	Prob > F	= 0.0000
Residual 1.49399853	28	.05335709	R-squared	= 0.8694
Adj R-squared	=		0.8461	
Total 11.4411765	33	.346702317	Root MSE	= .23099

att1ithinkusingwebsitesto	Coefficient	Std. err.	t	P>t	[95% conf. interval]
att2usingittoobtaininformat	.797594	.1037269	7.69		
att3ithinkusingwebsitesto	.2221679	.0932606	2.38		
att4usingwebsitestoobtainin	.0141283	.0555552	0.25	0.000	.5851191 1.010069
ppu1reachinginformationfaster	-.0247222	.0667089	-0.37	0.024	.0311322 .4132036
ppu2reachinginformationiseasi	.0414267	.0640075	0.65	0.801	-.0996712 .1279279
_cons	-.1976749	.3767723	-0.52	0.714	-.1613692 .1119248

The above table of the regression indicates the correlation between the two variables in hypothesis one H4. The r-squared is 0.869, and the p-value is less than 0.5. Correlation is significant at the 0.0001 level (2-tailed). The value of Sig (root means) is 0.230. According to the Correlation test, there is a strong positive relationship adj R-squared (0.846) between Perceived Usefulness and attitude about the intention to use the e-government service, therefore we reject the null hypothesis.

H5a Perceived ease of use of an e-government service will have a positive effect on the attitude toward the use of e-government service. Table 6 shows how we verified hypothesis H5a.

Table 6. Hypothesis H5a.

Source SS	df MS	Number of obs	=	34
F(6, 27) =	33.19			
Model 10.0750747	6	1.67917912	Prob > F	= 0.0000
Residual 1.36610178	27	.050596362	R-squared	= 0.8806
Adj R-squared =	0.8541			
Total 11.4411765	33	.346702317	Root MSE	= .22494

att1ithinkusingwebsitesto	Coefficient	Std. err.	t	P>t	[95% conf. interval]
att2usingittoobtaininformat	.7847742	.1049684	7.48	0.000	.5693969 1.000152
att3ithinkusingwebsitesto	.2154094	.0834456	2.58	0.016	.0441932 .3866256
att4usingwebsitestoobtainin	-.0106462	.0550997	-0.19	0.848	-.1237015 .102409
ppu1learningtousetheweb	-.0134785	.1207997	-0.11	0.912	-.2613391 .2343821
ppu2usingthewebsitespagesi	.0720482	.0898537	0.80	0.430	-.1123164 .2564128
ppu3thewebsitespagesarecle	.0162209	.1007568	0.16	0.873	-.1905149 .2229567
_cons	-.2128456	.3718079	-0.57	0.572	-.9757323 .5500411

The above table of the regression indicates the correlation between the two variables in hypothesis one H5a. The r-squared is 0.8806, and the p-value is less than 0.5. Correlation is significant at the 0.0001 level (2-tailed). The value of Sig (root means) is 0.2249. According to the Correlation test, there is a strong positive relationship adj R-squared (0.854) between Perceived ease of use of an e-government service and attitude toward the use of e-government service, therefore we reject the null hypothesis.

H5b Perceived ease of use of an e-government service will have a positive effect on the perceived behavioral control of the e-government service. Table 7 described the verification of hypothesis 5b.

Table 7. Hypothesis 5b.

Source SS	df MS	Number of obs	=	34
F(6, 27) =	5.29			
Model 16.9870429	6	2.83117382	Prob > F	= 0.0010
Residual 14.4541335	27	.535338279	R-squared	= 0.5403
Adj R-squared =	0.4381			
Total 31.4411765	33	.952762923	Root MSE	= .73167



pbclihavethemeanstoobtain	Coefficient	Std. err.	t	P>t	[95% conf.	interval]
pbc2itisuptometoobtaininf	.0927518	.1913547	0.48	0.632	-.2998756	.4853792
pbc3ibelieveifiwishican	.4371581	.2404892	1.82	0.080	-.0562849	.9306012
pbc4icaneasilyaccessthewebs	.2876239	.2536316	1.13	0.267	-.2327852	.8080331
ppeu1learningtousethewebsit	-.2974419	.411582	-0.72	0.476	-1.141938	.5470546
ppeu2usingthewebsitespagesi	-.2930434	.3320741	-0.88	0.385	-.9744031	.3883163
ppeu3thewebsitespagesarecle	.4333685	.3718808	1.17	0.254	-.3296679	1.196405
_cons	1.400928	.8920542	1.57	0.128	-.4294163	3.231272

The above table of the regression indicates the correlation between the two variables in hypothesis one H5b. The r-squared is 0.540, and the p-value is less than 0.5. Correlation is significant at the 0.0010 level (2-tailed). The value of Sig (root means) is 0.7316. According to the Correlation test, there is a strong positive relationship adj R-squared (0.438) between perceived ease of use of an e-government service will have a positive effect on the perceived behavioral control of the e-government service, therefore we reject the null hypothesis.

H5c PEU will have a positive effect on the PU of the e-Government services. Table 8 refers to hypothesis H5c.

Table 8. Hypothesis H5c.

Source	SS	df	MS	Number of obs	=	34
F(4, 29)	=	=	22.52			
Model	26.8985959	4	6.72464898	Prob > F	=	0.0000
Residual	8.66022761	29	.298628538	R-squared	=	0.7565
Adj R-squared	=	=	0.7229			
Total	35.5588235	33	1.07754011	Root MSE	=	.54647

ppu1reachinginformationfaster	Coefficient	Std. err.	t	P>t	[95% conf.	interval]
ppu2reachinginformationiseasi	.6471253	.1654344	3.91	0.001	.3087739	.9854767
ppeu1learningtousethewebsit	.3845947	.2897813	1.33	0.195	-.2080745	.9772639
ppeu2usingthewebsitespagesi	-.6853561	.2792602	-2.45	0.020	-1.256507	-.1142049
ppeu3thewebsitespagesarecle	.4757997	.2348013	2.03	0.052	-.0044229	.9560224
_cons	.7978423	.3966427	2.01	0.054	-.013383	1.609068

The above table of the regression indicates the correlation between the two variables in hypothesis one H5c. The r-squared is 0.756, and the p-value is less than 0.5. Correlation is significant at the 0.000 level (2-tailed). The value of Sig (root means) is 0.546. According to the Correlation test, there is a strong positive relationship adj R-squared (0.722) between the perceived ease of use of an e-government service will have a positive effect on the perceived usefulness of the e-government service, therefore we reject the null hypothesis.

H6 Trust will have a positive effect on the attitude toward the use of e-Government services. Table 9 explains the verification of hypothesis H6.

Table 9. Hypothesis H6.

Source	SS	df	MS	Number of obs	=	34
F(7, 26)	=	=	45.65			
Model	10.5802706	7	1.51146722	Prob > F	=	0.0000
Residual	.860905912	26	.033111766	R-squared	=	0.9248
Adj R-squared	=	=	0.9045			
Total	11.4411765	33	.346702317	Root MSE	=	.18197

att1ithinkusingwebsitestost	Coefficient	Std. err.	t	P>t	[95% conf.	interval]
att2usingittoobtaininformat	.8189687	.088267	9.28	0.000		
att3ithinkusingwebsitestoo	.1152209	.0875498	1.32	0.200		
att4usingwebsitestooobtainin	.0571079	.0484716	1.18	0.249	.6375333	1.000404
ptg1websitesbeingknowledgeable	.1820301	.0886143	2.05	0.050	-.0647404	.2951822
ptg2websiteskeepingtheircommi	-.0306704	.0707799	-0.43	0.668	-.042527	.1567428
ptg3websitesareinterestedint	.1303735	.0725951	1.80	0.084	-.0001191	.3641794
ptg4websitesconsideringmyinte	-.1121039	.0561254	-2.00	0.056	-.1761605	.1148197
_cons	-.5659908	.301671	-1.88	0.072	-.0188478	.2795948

The above table of the regression indicates the correlation between the two variables in



hypothesis one H6. The r-squared is 0.9045, and the p-value is less than 0.5. Correlation is significant at the 0.000 level (2-tailed). The value of Sig (root means) is 0.1819. According to the Correlation test, there is a strong positive relationship adj R-squared (0.9045) between the Trust will have a positive effect on the attitude toward the use of e-Government services, therefore this study rejects the null hypothesis. H7 TI will have a positive effect on trust.

Table 10. Hypothesis H7.

Source SS	df MS	Number of obs =	=	34
F(2, 31)	=		18.94	
Model 9.05854004	2	4.52927002	Prob > F =	0.0000
Residual 7.41204819	31	.239098329	R-squared =	0.5500
Adj R-squared	=		0.5209	
Total 16.4705882	33	.499108734	Root MSE =	.48898

pac1mehavingaccesstoacompu	Coefficient	Std. err.	t	P>t	[95% conf. interval]
pac2mehavingaccesstotheint	.6751807	.1218252	5.54	0.000	.4267166 .9236449
pti1legalandtechnicalstructur	.2221687	.0794638	2.80	0.009	.0601011 .3842362
_cons	.7942169	.6150279	1.29	0.206	-.4601408 2.048575

Table 10 indicates the correlation between the two variables in Hypothesis One H7. The r-squared is 0.5500, and the p-value is less than 0.5. Correlation is significant at the 0.000 level (2-tailed). The value of Sig (root means) is 0.488. According to the Correlation test, there is a strong positive relationship adj R-squared (0.9045) between the Trust in the internet will have a positive effect on the trust of e-Government services, therefore this study rejects the null hypothesis.

H8 Local factors will have a positive effect on the PBC to use the e-government service. Table 11 presents hypothesis H8.

Table 11. Hypothesis H8.

Source SS	df MS	Number of obs =	=	34
F(5, 28) =	6.19			
Model 16.5070255	5	3.3014051	Prob > F =	0.0006
Residual 14.9341509	28	.533362534	R-squared =	0.5250
Adj R-squared =	0.4402			
Total 31.4411765	33	.952762923	Root MSE =	.73032

pbclihavethemeanstoobtain	Coefficient	Std. err.	t	P>t	[95% conf. interval]
pbcl2isuptometoobtaininf	.1166032	.1647803	0.71	0.485	-.2209338 .4541403
pbcl3believeifiwishican	.2857127	.2478241	1.15	0.259	-.221932 .7933574
pbcl4icaneasilyaccessthewebs	.2404665	.197785	1.22	0.234	-.1646777 .6456107
psk1mehavingenoughcomputers	-.3340305	.1980453	-1.69	0.103	-.7397078 .0716468
psk2metacklingtheproblemsi	.2099209	.226159	0.93	0.361	-.2533448 .6731866
_cons	2.18317	.9619087	2.27	0.031	.2127888 4.15355

The above table of the regression indicates the correlation between the two variables in hypothesis one H8. The r-squared is 0.5250, and the p-value is less than 0.5. Correlation is significant at the 0.0006 level (2-tailed). The value of Sig (root means) is 0.730. According to the Correlation test, there is a strong positive relationship adj R-squared (0.4402) between the Local factors that will have a positive effect on the PBC to use the e-government service, therefore this study rejects the null hypothesis.

H9 Trust will have a positive effect on the intention to use the e-Government service. Table 12 is related to description of hypothesis H9.

Table 12. Hypothesis 12.

Source SS	df MS	Number of obs =	=	34
F(5, 28) =	8.41			
Model 13.1332626	5	2.62665253	Prob > F =	0.0001
Residual 8.7490903	28	.312467511	R-squared =	0.6002
Adj R-squared =	0.5288			
Total 21.8823529	33	.663101604	Root MSE =	.55899

int1iamplanningtousethewe	Coefficient	Std. err.	t	P>t	[95% conf. interval]
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int2iwilltrytousethewebs	.3662851	.270906	1.35	0.187	-.1886406	.9212108
int3iamconsideringusingthe	.6766589	.3056358	2.21	0.035	.0505922	1.302725
int4iwouldliketousethewe	.0564281	.2133556	0.26	0.793	-.380611	.4934672
pac1mehavingaccesstoacompu	.1497751	.2709769	0.55	0.585	-.4052959	.7048461
pac2mehavingaccesstotheint	-.2607895	.2621269	-0.99	0.328	-.7977322	.2761532
_cons	-.2134907	.8976605	-0.24	0.814	-2.052265	1.625283

The above table of the regression indicates the correlation between the two variables in hypothesis one H9. The r-squared is 0.6002, and the p-value is less than 0.5. Correlation is significant at the 0.0001 level (2-tailed). The value of Sig (root means) is 0.55899. According to the Correlation test, there is a strong positive relationship adj R-squared (0.5288) between the trust will have a positive effect on the intention to use the e-Government service, therefore this study rejects the null hypothesis.

H10 TG will have a positive effect on the trust. Table 13 is related to hypothesis H10.

Table 13. Hypothesis H10.

Source SS	df	MS	Number of obs	=	34
F(5, 28)	=			12.48	
Model 11.3678852	5	2.27357703	Prob > F	=	0.0000
Residual 5.10270308	28	.182239396	R-squared	=	0.6902
Adj R-squared	=			0.6349	
Total 16.4705882	33	.499108734	Root MSE	=	.4269

pac1mehavingaccesstoacompu	Coefficient	Std. err.	t	P>t	[95% conf. interval]
pac2mehavingaccesstotheint	.5997774	.143731	4.17	0.000	.3053578 .894197
ptg1websitesbeingknowledgeable	.0834201	.1873787	0.45	0.660	-.3004078 .4672479
ptg2websiteskeepingtheircommi	.156037	.1413079	1.10	0.279	-.1334192 .4454931
ptg3websitesareinterestedint	-.2471473	.1415579	-1.75	0.092	-.5371155 .0428208
ptg4websitesconsideringmyinte	.3386206	.1201617	2.82	0.009	.0924804 .5847607
_cons	.5989498	.562042	1.07	0.296	-.552341 1.750241

The above table of the regression indicates the correlation between the two variables in hypothesis one H10. The r-squared is 0.690, and the p-value is less than 0.5. Correlation is significant at the 0.0000 level (2-tailed). The value of Sig (root means) is 0.4269. According to the Correlation test, there is a strong positive relationship adj R-squared (0.6349) between the trust in government will have a positive effect on the intention to use the e-Government service, therefore this study rejects the null hypothesis.

4.2 Reliability Cronbach's alpha

The table 14 indicates the scale of scale of reliability coefficient for the intention of using the electronic government portal is 0.8725.

Table 14. Cronbach's alpha for the intention of using the electronic government portal.

Test scale = mean (unstandardized items)	
Average interitem covariance:	.3618538
Number of items in the scale:	4
Scale reliability coefficient:	0.8725

Table 15 indicates the scale of reliability coefficient for the Trust in Internet is 0,9006.

Table 15. Cronbach's alpha for Trust in the internet.

Test scale = mean (standardized items)	
Average	
Item-test Item-rest interitem	
Item Obs Sign correlation alpha	
pti1legala~r 34 + 0.8582 0.7712 0.6356 0.8746	
pti2theint~c 34 + 0.8790 0.8030 0.6209 0.8676	
pti3theint~a 34 + 0.8973 0.8315 0.6080 0.8612	
pti4mebein~t 34 + 0.6674 0.5009 0.7700 0.9305	
pti5mebein~e 34 + 0.9272 0.8791 0.5869 0.8504	
Test scale 0.6443 0.9006	
Interitem correlations (obs=34 in all pairs)	



pti1legalandtechnicalstructur	pti2theinternetisasaferplac	pti3theinternethasadequatesa
pti1legalandtechnicalstructur	1.0000	
pti2theinternetisasaferplac	0.8773	1.0000
pti3theinternethasadequatesa	0.7415	0.8685
pti4mebeingateaseinusingt	0.3131	0.2952
pti5mebeingsatisfiedwiththe	0.6977	0.6764
pti4mebeingateaseinusingt	pti5mebeingsatisfiedwiththe	
pti4mebeingateaseinusingt	1.0000	
pti5mebeingsatisfiedwiththe	0.7885	1.0000

Tables 16 indicate the scale of reliability coefficient for the Trust on the Internet is 0.8840.

Table 16. Cronbach's alpha for Attitude and perceived behavior control.

Interitem correlations (obs=34 in all pairs)

att1ithinkusingwebsitesto	att2usingittoobtaininformat	att3ithinkusingwebsitesto
att1ithinkusingwebsitesto	1.0000	
att2usingittoobtaininformat	0.9084	1.0000
att3ithinkusingwebsitesto	0.7683	0.6842
att4usingwebsitestoobtainin	0.4427	0.3686
pb1ihavethemeanstoobtain	0.5040	0.4387
pb2itisuptometoobtaininf	0.6155	0.6112
pb3ibelieveifiwishican	0.4376	0.4254
pb4icaneasilyaccessthewebs	0.3634	0.3036
att4usingwebsitestoobtainin	pb1ihavethemeanstoobtain	pb2itisuptometoobtaininf
att4usingwebsitestoobtainin	1.0000	
pb1ihavethemeanstoobtain	0.2537	1.0000
pb2itisuptometoobtaininf	0.1872	0.3563
pb3ibelieveifiwishican	0.5615	0.6612
pb4icaneasilyaccessthewebs	0.5536	0.6266
pb3ibelieveifiwishican	pb4icaneasilyaccessthewebs	
pb3ibelieveifiwishican	1.0000	
pb4icaneasilyaccessthewebs	0.8126	1.0000

5. Discussion

Ajzen criticizes the technology acceptance model TAM theory applied in social science, he said that it does not provide the extendibility element in the research that needs to explain more about the usefulness elements. Ajzen, 1991 Therefore, researchers like Barki and Benbasat advocated for the implantation of the TPB theory of planned behavior to be able to apply the extendibility element in the research of the electronic government field. In the domain of explaining human behavior the theory of planning behavior indicates a good direction in this field of explaining and understanding human behavior. Recently, technology has become a main factor in social science, here to discuss the government to citizens providing services G2C electronic government initiatives. Most of the research depends on the technology acceptance model TAM, and UTAT theories to explain the effect of the technology in the electronic government implementation. Most of the research about the Republic of Korea' electronic. Therefore, this paper applies the theory of planned behavior. The results indicate that most foreigners are very familiar with the internet in their home countries more than they are with the electronic government in their home countries. Therefore, the Republic of Korea's lifestyle made foreigners more familiar with the electronic government portal. However, the research limitation is the number of participants should be more in future research. Also, the follow-up with the electronic governmental portal for the Korean citizens who live abroad in certain countries that differ from than Republic of Korea regarding the electronic government portal use. If their attitude changed due to existing overseas in different circumstances.

6. Conclusions

This paper explains that the theory of planned behavior is a theoretical framework that

explains the factors that affect the intention of the person which will affect his behavior. These factors are the attitude toward the behavior, the subjective norm, and the perceived behavioral control. Ajzen depended on Bandura's self-efficacy theory that changed it to the perceived behavioral control. That tells more about the capability of the individual from the available resources and the possibilities of him to be able to proceed with a behavior.

This paper proposed a survey questionnaire that was distributed to both Korean citizens and foreigners who have lived or lived in the Republic of Korea for less than three years, more than five years, or more than ten years of staying. In addition, the survey questions contained information about the familiarity of the respondents with internet use in the Republic of Korea and their home country case of foreign residents. Not only about internet familiarity but also about the familiarity with the electronic government in the Republic of Korea and the home country's electronic government in the case of foreign respondents. The last general question is about whether to use the electronic government portal in the Republic of Korea or not.

The results of the survey respondents' profile are for the first age group between 18~29 and 19%, and second age group between 30~39 70%, and the third age group between 40~49 11%, however for the fourth and fifth age groups from 50 and 60 years old no one participated in the survey for the participant's age. For the participants' gender, the male participants are 36%, while the female participants are 63%. For the education question, the participants were distributed into five groups categorially from the Secondary, Diploma, Bachelor, and Master, until Ph.D. degrees 0%, 0%, 7%, 60%, and 33% respectively in order. For the occupation question, the participants were distributed into five groups Student, Employee, Researcher, Business owner, and Retired: the results are in respective order 26%, 52%, 11%, 7%, and 4%. That has a meaning that the employees are the group who are using the electronic government portal. Master's degree holders followed by Ph.D. holders are the group who are using electronic governmental websites.

The results indicate that most foreigners are very familiar with the internet in their home countries more than they are with the electronic government in their home countries. Therefore, the Republic of Korea's lifestyle made foreigners more familiar with the electronic government portal. The last general question is about whether to use the electronic government portal in the Republic of Korea or not according to the yes or no answers are 78%, 22%. The results of the regression indicate the correlation between the two variables in Hypothesis One H2. The r-squared is 0.572, and the p-value is less than 0.5. Correlation is significant at the 0.000 level (2-tailed). The value of Sig (root means) is 0.5681. According to the correlation test, there is a strong positive relationship adj R-squared (0.513) between technical factors and usefulness, therefore we reject the null hypothesis. Meanwhile, this paper's findings assume that there is a positive correlation among the variables used in this model. The scale of reliability coefficient for the intention of using the electronic government portal is 0.8725. The scale of reliability coefficient for the Trust in the internet is 0,9006. The scale of reliability coefficient for the Trust in Internet is 0.8840.

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