

## ARTICLE

# PERFORMANCE EXPECTANCY (PE) AND ACCEPTANCE AND WILLINGNESS TO USE ELECTRONIC SERVICES: CITIZEN-ORIENTED ATTITUDE

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## ABSTRACT

Living in today's world is a constant state of change. The advent of information and communication technologies and consequently, e-government, are the most important parts of these changes. If challenges and barriers to e-government development are identified, and appropriate strategies are adopted to fix them, implementing e-governance will bring numerous benefits to society. The statistical population of this study consists of water subscribers in Guilan Province that according to the Department of Water and Wastewater Inquiry which covers 99.86 percent of the urban population, and 652500 households, 458100 meters have been recorded. SPSS and AMOS software were used for data analysis. The results showed positive impact of performance expectancy on the acceptance and willingness to use e-government services.

## INTRODUCTION

Different studies show that approximately all countries around the world are very optimistic in acquiring maximum benefits and advantages of information and communication technology through consensus in the core of public services systems and increasing the efficiency and effectiveness of public services via e-government [1, 2, 3]. The ultimate goal of different governments in implementing e-government is to provide people with the best services for developing competitive services in association with private sectors services and good governance in relation to the participation of citizens. Implementation of e-government has many issues to be solved to face the demands of twenty-first century from the governments, government agencies, politicians and the market economy. Among the various key issues discussed in e-government, the hottest topics include: open and free competition between public and private services systems, promoting public-private sector partnership and cooperation which is created by post-modernism displays a more effective, efficient and high-quality public sector, increasing citizen participation in government's decision-making by considering them as customers and the spread of democracy and finally, collecting the benefits of ICT for better market economy and globalization [4,5]. Although many articles focus on e-government acceptance from provider's view, relatively few know about why and under what conditions the public will accept e-government services (6). So the focus of this research is on accepting government services by citizens ( the applicants ). Despite few studies examining the acceptance of electronic services by citizens [7, 8], the important point is that, the development of society knowledge requires an informed citizen and a positive attitude, real use of new technologies such as e-government [9].

With the need of e-government for transparency, better accountability and government services, the citizens' problem in accepting the low level of e-government services in developing countries was diagnosed. This problem requires cultural, political, technological and social perspectives. Attitude and desire of citizens to use e-government services are key determinants of their interest in the adoption and use of e-government services. Acceptance of e-government services by citizens is a key issue for e-government initial success [10]. In addition, e-government services can not improve government service delivery if not used by the public [11].

On the one hand, understanding the advantages and benefits of using electronic services by customers is very important. Performance expectancy (PE) refers to the belief that the use of electronic services and the Internet will help users and customers to obtain benefits such as efficiency, productivity, and saving time as a result of the availability and customization of information [12,13]. In previous research in 2015, Al-Hujran et al by using a study with several study areas and in a large scale with 413 Jordanian citizens showed that attitude and desire of citizens to use e-government services are key determinants of their interest in the adoption and use of e-government services. Citizens attitude is determined in turn by the public perceived value and ease of use. These results in terms of management imply that the government needs to pay more attention to citizens attitude and desire to use e-government services [14]. In this regard, water and wastewater companies have ongoing and close interaction with people, because they offer services that are associated with people's daily life. Therefore, the water and sewerage companies in different provinces are going to equip and update their electronic services.

According to the mentioned literature, the main question of this research is that how much is the impact of performance expectancy on acceptance and willingness to use e-governance in water and waste water company?

### KEY WORDS

performance expectancy, e-government acceptance, water and waste water organization

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**METHOD**

**Models and hypotheses**

The research model developed by the researchers examines the relationship between performance expectancy and acceptance and willingness to use electronic government services.



**Fig. 1:** The research conceptual model

According to the model, the following hypothesis will be tested:

H1: Performance expectancy has a positive effect on the acceptance and willingness to use e-government services.

**Sample size and data collection**

This study, according to classifying research in terms of objective lies in the category of applied research. The statistical population of this research consists of water subscribers in Guilan Province that according to the Department of Water and Wastewater Inquiry which covers 99.86 percent of the urban population, and 652500 households, 458100 meters have been recorded. The sample size was taken using the number of 460 citizens by Cochran's formula. In this study, survey method by means of a questionnaire was used for data collection. For the willingness and acceptance of e-government services, standard questionnaire with 3 items [15] is used. In the case of performance expectancy variable, 6 items raised by [16] were used .

**Findings**

From 460 respondents, 58 percent (267 individuals) were male and 42% of the population ( n = 193) were female.

**Table 1:** Frequency distribution of the studied sample in terms of gender

Gender	Frequency	Percentage
Male	267	58
Female	193	42
Total	460	100

From 460 respondents, 85 people(18.5%) were high school diploma or lower degree, 277 individuals (60.2%) held associate's degree and bachelor's degree, 86 (18.7 %) had MA and 12 (2.6%) were doctorate degree holders. In [Table 2] the frequency distribution of individuals is shown in terms of education level.

**Table 2:** Frequency distribution of individuals based on education

Degree	Frequency	Percentage
High school diploma or lower degree	85	18.5
Associate's degree & bachelor's degree	277	60.2
MA	86	18.7
PhD	12	2.6
Total	460	100

Amounts of service quality indices (efficiency, reliability, responsiveness, security), desire and acceptance of electronic services, performance expectancy and transformational management are listed in [Table 3].

**Table 3:** Values of descriptive indices for the study variables

	Number	Mean	Median	Mode	Standard deviation	Variance	skewness	kurtosis	Min amount	Max amount
Willingness & acceptance of electronic services	460	2.17	2	2	0.826	0.684	0.709	0.536	1	5
Performance expectancy	460	1.99	2	1	0.794	0.631	0.654	0.125	1	5

Before testing the hypotheses of this study, normality of variables should be ensured. In quantitative variables, to determine the normality of univariate distribution, it is necessary to investigate the skewness and kurtosis of these variables' size. If the skewness and kurtosis were in the range of +2 and -2, we assume it acceptable for our current purposes. Otherwise, it should be converted.

**Table 4:** K-S test results for the assumption of normal distribution

Variables	Sample Size	Skewness	Kurtosis
Willingness & acceptance of electronic services	460	0.709	0.536
Performance expectancy	460	0.654	0.125

According to the results shown in [Table 5] in connection with the model of willingness and acceptance of electronic services, resultant of fitting indices confirms the model at 1% margin of error. Regression coefficients of the model measuring the willingness and acceptance of electronic services show the effect of each of the variables or items in explaining the variance or the primary factor. [Table 6] also shows confirmatory factor analysis results for the willingness and acceptance of e-services.

[Table 5] The fitting indices of the model measuring the willingness and acceptance of the willingness and acceptance of e-services

**Table 5:** The fitting indices of the model measuring the willingness and acceptance of e-services

Indices	P	CMIN/DF	RMR	GFI	IFI	TLI	CFI	RMSEA
Willingness & acceptance	-	-	0.000	1.000	1.000	-	1.000	0.50
Acceptable Level	> 0.05	< 5	< 0.05	> 0.90	>0.90	>0.90	>0.90	<0.1
Result	-	-	Fit	Fit	Fit	-	Fit	Unfit

**Table 6:** Confirmatory factor analysis results for the willingness and acceptance of e-services

Variable	Question or structure	Critical amounts	Standard factor loadings	Level of significance	Result
Willingness & acceptance of electronic services	1	-	0.74	0.000	Verified
	2	10.98	0.84	0.000	Verified
	3	10.62	0.58	0.000	Verified

According to the results shown in [Table 7] in connection with performance expectancy model, outcome of fitting indices confirms the model at 1% margin of error. Regression coefficients of the model measuring performance expectancy show the effect of each of the variables or items in explaining the variance or the primary factor. [Table 8] also shows confirmatory factor analysis results for performance expectancy.

**Table 7:** The fitting indices of the model measuring performance expectancy

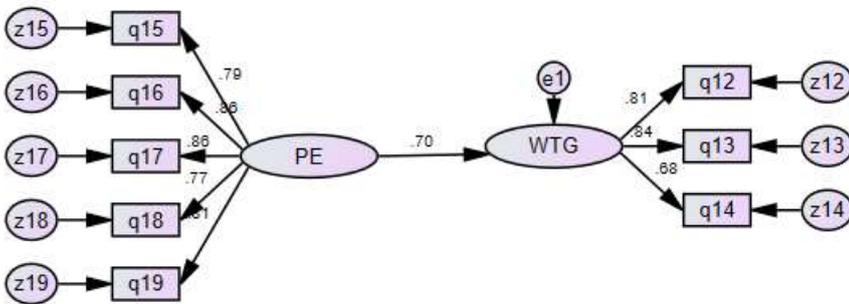
Indices	P	CMIN/DF	RMR	GFI	IFI	TLI	CFI	RMSEA
Performance expectancy	0.000	3.47	0.029	0.91	0.96	0.92	0.96	0.16
Acceptable level	>0.05	<5	<0.05	>0.90	>0.90	>0.90	>0.90	<0.1
Result	Fit	Fit	Fit	Fit	Fit	Fit	Fit	Unfit

**Table 8:** confirmatory factor analysis results for performance expectanc

Variable	Question Or Structure	Critical standard Amount	Level of factor Loading	Result significance
Performance expectancy	4	-	0.77	0.000
	5	20.186	0.87	0.000
	6	20.968	0.90	0.000
	7	17.114	0.76	0.000
	8	17.952	0.79	0.000

According to the results shown in [Table 9] associated with the aforementioned model, the resultant of fitting indices confirms the model at a confidence level of 99 percent. According to the [Table 10], P value between performance expectancy and acceptance and willingness to use e-services is equal to 0.00, which is slightly smaller than 0.05. So it can be concluded that the hypothesis is approved at the level of 99%. In other words, it can be said that with 99% confidence level, performance expectancy has a positive effect on the willingness to use e-government services.

Standardized regression coefficient as shown in [Fig. 10] between two variables, performance expectancy and acceptance and willingness to use electronic services, is 0.70. This value is larger than 0.6. So, performance expectancy variable has a strong and positive impact on the adoption and use of e-services.



**Fig. 2:** Structural equation modelling of hypothesis H1

**Table 9:** Overall fitting indices of structural equation modelling analysis for hypothesis H1

Indices	P	CMIN/DF	RMR	GFI	IFI	TLI	CFI	RMSEA
Model	0.000	1.40	0.078	0.92	0.90	0.86	0.90	0.051
Acceptable level	> 0.05	< 5	< 0.05	>0.90	>0.90	>0.90	>0.90	< 0.1
Result	Unfit	Fit	Unfit	Fit	Fit	Unfit	Fit	Fit

**Table 10:** Regression co-efficients(results of testing hypothesis H1)

Hypothesis	Regression coefficients			Critical amount	P	Result	Effect
	Direct effect	Indirect effect	Total effect				
performance expectancy- willingness and acceptance of e-government services	0.70	-	0.70	-	0.000	Verified	Positive

### CONCLUSION

Meanwhile, governments are spending a lot to deploy hardware and software to provide e-government services for citizens. Obviously, if these services are not accepted by the citizens, e-government projects will be faced with difficulty. Hence, the importance of research in water and wastewater organization of guilan province will be more evident, since this organization along with other government agencies for the welfare of citizens, saving their time and cost and preventing unnecessary visits to government agencies, has provided e-government project in the form of online bill payment and online registration for wwc services.

E-government has many benefits that is considered as a competitive advantage for the organizations which use it. The most important known advantages of e-governance after implementation in organizations include: more efficient public administration, provide better public services for citizens, better interaction with citizens and business sectors and industries, providing people with services at any time and in any place, more facilities and speed, greater transparency, greater accountability, integration of citizens and spreading self-reliance culture in providing services.

#### CONFLICT OF INTEREST

None

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None

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