The role of gender on modifying the relationship between service quality and eternal acceptance of e-government

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Abstract. The role of service quality in the acceptance of e-government applications is very important. Previous studies have shown that the quality of services affects the acceptance of e-government applications positively. In this study, the researcher examined the relationship between the quality of service and the acceptance of e-government applications and studied gender roles in modifying the relationship. The findings from the analysis of 543 respondents using smartPLS show that there is a positive relationship between service quality and e-government acceptance (β = 0.40, p < 0.01) thus explaining a total of 13% variance. However, the role of gender as moderator in this study are not supported. The findings are crucial for the purpose of improving e-government implementation.

1. Introduction
The quality of service in e-government is very important. According to Cegarra-Navarro, Pachón, & Cegarra [1] the use of e-government has yet to be understood in depth. There are various definitions given by scholars in defining e-government. Among the most interesting are the definitions of Durrant [2] stating that e-government is an activity involving a link between government and people with information technology assistance. Some scholars argue that e-government has the potential to enhance the effectiveness of the relationship between the government and the people [1] in addition to saving costs [3]. Although there are so many advantages available from e-government, its non-optimal use will result in wastage. In the Malaysian context, the use of e-government applications is still low. Based on Sahari & Abidin [4], it is concluded that the use of e-government services in Malaysia is still low. Although the government has deployed ICT applications in rural areas, there has been no improvement in its use [4]. Therefore, this paper will investigate the factors that contribute to the continued use of e-government in Malaysia.

2. Literature review
2.1. Malaysian e-government initiatives
Government initiatives in improving inter-governmental affairs with the people have pushed the use of information technology more seriously. The use of information technology in government and people’s affairs is eventually known as e-government. In Malaysia, e-government applications started as the government set up an electronic government premier application of the Multimedia Super Corridor (MSC). Under the initiative, the government has set up several e-government applications that vary among them are e-filing, s-syariah, the Job Clearing System, Human Resource Management.
Information System, HRMIS, e-services, e-procurement, project monitoring system and Generic Office Environment.

2.2. Theories on technology acceptance
There are various theories that explain the phenomenon of admissions technology. As illustrated by Taherdoost [5], there are 8 theories of technology acceptance commonly used by researchers. Theory is TRA, TAM, TPB, UTAUT, ETAM, Igbaria’s Model, Social Cognitive Theory (SCT), Diffusion of Innovations Theory (DOI), Perceived Characteristics of Innovating Theory (PCIT), Motivational Model (MM), Uses and Gratification Theory (U & G), The Model of PC Utilization (MPCU) and Compatibility UTAUT (C-UTAUT). According to Taherdoost [5], TRA is a model used in sociology and psychology but it is widely used in information technology research. This model is the oldest model that has become the basis of the more modern technology acceptance theory such as UTAUT.

3. Hypothesis development

3.1. DeLone & McLean Success Model
The basic theory used in this study is the Delone & Mclean Success Model. This theory was founded by Delone and Mclean. There are three variables in this model. According to Wang & Liao [6], DeLone & McLean Model has six variables namely system quality, information quality, IS use, user satisfaction, individual impact, and organization impact. This model has been used by many information system researchers in predicting the success of an information technology application. In this study, researchers are keen to use only one variable of Delone and mcLean which is service quality.

3.2. Service Quality
Service quality refers to The linkage between service quality and continuance intention to use e-government has been tested for many times. Study by Chen, Yang, Zhang, & Yang [7], found that there is positive and significant relationship between service quality and perceived usefulness which in turn affect continuance intention to use e-government. Similar results was discover by Dağhan & Akkoyunlu [8] where they found that there is positive and significant relationship between service quality and satisfaction which in turn affect continuance intention to use on-line learning. Study by [9] revealed that there is positive and significant relationship between service quality and satisfaction which in turn affect continuance intention to use mobile payment.

H1: Service quality will positively affect continuance intention to use e-government
H2: Service quality will positively moderates the relationship between service quality and continuance intention to use e-government such that, the effect will be stronger for men

4. Research Methodology

4.1. Research design
This study is a quantitative study. The data were collected using non-probability sampling method specifically convenience sampling. This sampling method was chosen because there is no sampling frame. Researchers are aware of the shortcomings of convenience sampling methods where the research findings can not be generalized. However, researchers take the necessary steps to get samples that are as close as possible to populations. A total of 543 samples were successfully quoted for further analysis.

4.2. Instrument development
This study adapted instruments from previous study. For service quality construct, all items were adapted from Wang & Liao [6] and continuance intention were adapted from Bhattacherjee [10]
4.3 Data analysis
This study utilizing SPSS to obtain descriptive information and smartPLS 2.0 software to test the hypothesis. smartPLS is used based on its ability to analyze abnormal data and its suitability with the nature of this study which is a model extension in nature.

5 Results

5.1 Descriptives information
Based on the descriptives information, there were 78.6% female and 21.4% were males. As for educational level, result shows that SRP/PMR1 (Penilaian Menengah Rendah) accounted for 0.9% of the samples; SPM2 (Sijil Pelajaran Malaysia) accounted for 15.7% of the samples; STPM3 (Sijil Tinggi Pelajaran Malaysia)/Diploma accounted for 18.4% of samples; Bachelor degree accounted for 50.3%; Masters degree accounted for 13.3% while PhD ranking accounted for 1.5%. Most of the respondents were aged as follows: between 26−35 years of age (41.8%); 36–45 years of age (36.5%); 46–55 years of age (16.9%); and 56–55 years of age (1.7%). As for the race, most respondents were Malay (79.2%); followed by Chinese (20.1%) and Indian (0.7%). As for internet experience, most respondents (41.8%) had at least 13 years of experience with the internet. This was followed by results comprising: 4−7 years of experience (36.5%); 8–11 years of experiences (16.9%); and, finally, less than one (1) year of experience (3.1%). Further, the majority of the respondents (47.7%) were e-filing users: e khidmat accounted for 21%; e-sila accounted for 11%; electronic labour exchange accounted for 10.7%; e-perolehan accounted for 7.9%; e-syariah accounted for 1.5%, and PMS accounted for 11%.

5.2 Reliability and validity
We are using several statistical methods for reliability and validity tests. The tests are including Average variance extracted (AVE), cross-loading, as well as composite reliability and cronbach alpha for internal consistency assessment.

5.3 Internal consistency reliability
Internal consistency for the constructs used to measure service quality was acceptable with Cronbach alpha of 0.88. Continuance intention scored 0.92 and it was also met with Cronbach alpha cut-off point of 0.70 (Hair et al., 2006). As for the convergent validity, all of the scale pass the requirement with an AVE of 0.80 for service quality and 0.88 for continuance intention. Thus satisfy the threshold values of 0.5 ([11] (see Table 1). As for discriminant validity, all constructs demonstrate good discriminant. According to cross-loading table, all of the values were within the acceptable level of below 0.40 (Hair et al., 2006).

| Table 1. Convergent validity |
|-----------------------------|
| Constructs                  | no of item | Composite reliability | Cronbach alpha | Author |
| Service quality             | 3          | 0.9590                | 0.881          | [6]    |
| Continuance intention       | 3          | 0.9244                | 0.9360         | [10]   |
| AVE                         |            | 0.80                  | 0.88           |        |

5.4 Cross-loading

| Table 2. Cross-loading |
|-----------------------|
| continuance           | service quality |
| Cont1                 | 0.941855        | 0.337097         |
5.5. Hypothesis testing

This study has been using structural equation modeling (SEM) to test the hypothesis. SmartPLS 2.0 software was employed to obtain estimates for the proposed model. Bootstrapping method in PLS was employed to obtain t-value for the significance test. The coefficient of the hypothesis in this study are shown in Figure 1. The t-value indicates the significance of the relationships between the predictor and outcome variables are shown in Figure 2. The $R^2$ value indicates the percentage of variance explained by the independent variables. Results shows that continuance intention is significantly predicted by service quality ($\beta = 0.35, p < 0.05$) thus explaining 0.13% of variance (see Table 3)

![Figure 1. Beta value](image-url)
Figure 2. Bootstrapped value

Table 3. Hypothesis testing result

| Hypothesis                                                                 | Beta value | Result          | Variance accounted |
|---------------------------------------------------------------------------|------------|-----------------|--------------------|
| $H_1$: Service quality will positively affect continuance intention       | $\beta=0.35$ | Supported       |                    |
| to use e-government                                                        |            |                 |                    |
| $H_2$: Service quality will positively moderates the relationship between | $\beta=0.05$ | Not supported   | 0.13%              |
| service quality and continuance intention to use e-government such that,   |            |                 |                    |
| the effect will be stronger for men                                       |            |                 |                    |

*p<.05, **p<.01, ***p<.001

6. Discussion, conclusion and limitation

The findings clearly show that the relationship between service quality and continuance intention is positive and significant thus supporting the first hypothesis of the study. This finding signifies that quality service is very important in helping to ease the use of e-government. It is also implies that the community will continue to use e-government if they find that the quality of e-government applications is in good condition. This finding supports the similar findings of Akter, Ray, & D’Ambra, [12]. Based on the findings, we would like to recommend that the government should retain the current state of service quality as the data proves that the quality is up to the standard. Therefore, it will ensure the continuous usage by the citizen. On the other hand, result demonstrates that gender plays no role as a moderator for this study. This implies that service quality are the same across gender. Regardless male or female, the perception for service quality were good. Future study should look at different aspects of quality such as content quality and system quality. The representativeness of the population aspect must also needs to be considered by using the probability sampling approach.

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