The influence of e-Participation on e-Filing Participation: A Study of Citizen Adoption on e-Government Services

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Abstract - It is a global trend that many governments used web-based technologies to keep pace with the various changes arising from the socio-political and economic environment of the times. This paper asserts that the concept of e-government which was originally aimed to improve efficiency of the government management system and more importantly to expand government revenue would eventually recast towards a participatory government, without which the survival of any institution cannot be guaranteed. The paper briefly reviewed major issues that might explain the e-Participation behavior. (They include: Information Quality, Systems Quality, User Satisfaction, Facilitating Condition, Performance Expectancy and Effort Expectancy) To this effect, the Malaysia’s e-Filing Taxation System (e-FTS) was studied due to the facts that despite incredible efforts put by the Malaysian government the actual citizen participation in the e-FTS is lagging. The Unified Theory of Acceptance and Use of Technology (UTAUT) Model was utilised to study the gap that exists between the expected and the actual citizen participation in the Malaysia’s e-Filing Taxation Systems (e-FTS). The paper examines (i) the relationships between Information Quality and Systems Quality on User Satisfaction of the e-FTS; ii) the relationships between User Satisfaction on Performance and on Effort Expectancies of the e-FTS; iii) the effects of Performance and Effort Expectancies and Facilitating Condition (FC) on Behaviour Intention to Use (BIU) of the e-FTS; and finally (iv) effects of e-Participation on FC of the e-FTS. The results had indicated that e-Participation, Information Quality and Systems Quality are significant indicators for taxpayers’ intention to use the e-FTS. A confirmatory factor analysis (CFA) using AMOS was conducted to test the measurement model. In conclusion, Malaysian tax payers were found to be rather pessimistic in using the new technology and e-Government services. Policy measures were forwarded which could be considered to close the gap between the high expectation and the reality of citizen adoption one Government services.

Index Terms - e-Participation, e-Filing, e-Government.

I. INTRODUCTION

The term electronic-Government (e-Government) is not a mere technology innovation but it is a process of e-Governance, which demands the application of various Information Communication Technology (ICT) in the process of delivering government services. E-Government should also facilitate citizens’ participation (e-Participation) for better decision-making, building democratic and effective governance [1]. As defined by Sanford and Rose [2, p.406], e-Participation is ‘the extension and transformation of participation in societal democratic and consultative processes, mediated by information and communication technologies (ICTs)’. This paper explained how participatory research could be applied in decision-making to enhance e-Government services, focusing on Malaysia’s tax e-Filing System. In the following Section 2.0 literature on e-Participation was discussed in the light of broad societal use of the ICT and social networking. The paper was based on the Research Model and Hypotheses presented in Section 3. The Research Design and Methods were summarised in Section 4, prior to Data Analyses conducted and Results explained in Section 5. Research contributions and limitations were discussed in Section 6. In the concluding Section 7, some guidelines for online services that might enhance the use of the e-Filing System were listed.

II. LITERATURE REVIEW

A. E-participation

Recently, the Internet has become a valuable means of enable governments to decrease administrative costs, improve service delivery, and enable citizens’ participation anywhere and anytime it is convenient for them. Thus, using e-participation, governments have attempted to create citizen-based online discussion forums, group support and exchange ideas. Broad societal use of social networking, chat technologies, discussion forums, group decision support systems and blogs provide a positive environment for e-Participation facilitation [3]. The combination of motivated citizens and improvements in technological infrastructure has resulted in a global proliferation of e-Participation projects that facilitate exchange information [4; 5]. It was found that increases in...
access to social networking over the years did not lead to increased community-government involvement, suggesting that present day technologies were still ineffective in facilitating new forms of public participation in governance [6]. In addition, e-Participation tools remain unnoticed and unused on many government websites [7].

B. Facilitating Condition
Facilitating Condition is the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system [8]. Facilitating conditions was comprised of three root constructs: perceived behavioural control, facilitating conditions, and compatibility [8]. Each of these root constructs is operationalized to include aspects of the technological and/or organizational environment that are meant to remove barriers to use [8].

C. Performance Expectancy
Performance expectancy is defined in this study as the degree to which a citizen believes that using government online services in e-Filing is helpful, useful and practical more than the traditional government services. Performance expectancy was measured by the perceptions of using e-government services in terms of benefits, such as saving time, money and effort, facilitating communication with government, improving the quality of government services and by providing citizens with an equal basis on which to carry out their business with government [9]. Hence, individuals expect the technology such as information system would improve performance and more likely the technology introduced been adopted [8]. With performance expectancy, citizens would be able to accomplish task quickly such as saving time, enhance effectiveness with e-Government and intention to use e-Filing technology.

D. Effort Expectancy
Effort Expectancy is the degree of ease associate with the use of the system [8]. The UTAUT model identifies three constructs, from the eight models, which make up the concept of effort expectancy: perceived ease of use, complexity, and ease of use [8].

E. Information Quality
Information quality is defined as the degree to which quality information is provided to the users to fulfil their needs of getting the appropriate information [10]. The content of the website is the most important element for success and to give rise to user satisfaction either to attract or driven away citizens’ from the website [11]. Good website design must fulfil users’ needs for information [12].

F. System Quality
System quality is the measure of the actual system of the electronic information system by using the constructs of functionality, reliability, usability and efficiency [27] as the determinant of overall user satisfaction and significant predictor of system use [13]. Hence, the measure of the system quality is on the features and performance characteristic of the e-Government website to enhance user’s satisfaction of the user with the system. A better system quality and a better service are further related to user satisfaction [14].

G. User Satisfaction
User satisfaction is the measurement of success or effectiveness of the user experience related to Information System satisfaction and System quality satisfaction [10;15]. Hence, information provided by the system and the quality of the systems are decisive in determining the level of the web-based information system satisfaction. Information quality and system quality were positively related to online satisfaction [16].

I. RESEARCH MODEL AND HYPOTHESES
The Unified Theory of Acceptance and Use of Technology (UTAUT) was proposed and validated in order to provide a unified theoretical basis to facilitate research on Information System (IS), Information Technology (IT) adoption and diffusion [8]. The Unified Theory of Acceptance and Used of Technology (UTAUT) was developed through the review and mapping of the eight dominant theories and models such as Theory of Reasoned Action (TRA) [55], the Theory of Acceptance Model (TAM) [56], the Motivational Model (MM) [57], the Theory of Planned Behaviour (TPB) [58], a combined Theory of Planned behaviour and Technology Acceptance Model (C-TPB-TAM) [59], the Model of PC Utilization (MPCU) [60], the Innovation Diffusion
Theory (IDT) [61] and lastly the Social Cognitive Theory (SCT) [62]. A number of factors had been considered in building the theoretical framework before it was presented as an integrated model shown in Figure 1.

A. Information Quality
Information quality is the key measurement of user satisfaction. Satisfaction reflects user positive perception on the quality of web-based information and quality relevance of information to user needs [17]. In the e-Filing system, the reliability content dimension include information accuracy, information relevance and information completeness in order to achieve the intended level of information satisfaction [18].

B. System Quality
System quality is the measure of the actual electronic information system by using the constructs of functionality, reliability, usability and efficiency [10] as the determinant of overall user satisfaction. A better system quality and a better service are further related to user satisfaction [19]. According to Ambali [20, p152], in line with the era of fast moving world, a better system from respective government to citizens are highly needed.

C. User Satisfaction
Internet experience plays an important role in influencing people’s use of government online services [8]. Thus, Internet experience needed to be considered in order to explain users’ effort and performance expectancy [21]. Hence, Anna and Yusniza [22] suggested that a system that is useful and easy to use is important for taxpayers to voluntarily e-File their tax returns electronically. According to Zaherawati [23], the tax payers’ perception towards e-Filing is influenced by their evaluation of the usefulness of the e-filing system. Thus, the government should increase its efforts to promote the usefulness and user-friendliness of the e-Filing system of high output quality with greater result for demonstrability of satisfaction. Ambali [20] suggested a need for improvement in the implementation of the online e-Filing to ensure that the system conform to the public e-filers’ satisfaction as the result for users’ retention. As a matter of fact, the design of the tasks and context of the technology could influence the performance and effort expectancy which in turn could influence the adoption and use of the system due to user satisfaction [24].

D. Performance Expectancy
Several studies on UTAUT indicated that Performance Expectancy has a significant influence on the intention to use the system [25;26;27;28]. Internet experience also plays an important role in influencing people’s use of online government services [8]. Performance expectancy is defined in this study as the degree to which a citizen believes that using government online services in e-Filing is more helpful, useful and practical compared to traditional government services. Hence, users who expect technology such as information systems would improve performance would be more likely to adopt the technology introduced [8].
E. Effort Expectancy

Effort expectancy has been validated as a direct determinant of user’s behavioural intentions to use e-Filing technology if does not require much effort then it would improve to participation to adopt the system [29]. Likewise, the design of an appropriate tasks and context of the technology would eventually influence the performance and effort expectancy that would influence the adoption of the use of the system. Some studies under UTAUT indicated that there is a positive effect of the Effort Expectancy variable on the Behaviour Intention to use the system [25,27,30,31,32]. Therefore, effort expectancy could have result in a positive relationship with behavioural intention in accepting e-Filing among tax in Malaysia.

F. Facilitating Condition

The main aim of facilitating conditions is to remove barriers of use. In other words, facilitating conditions are measured by the perception of being able to access required resources to obtain knowledge and skills and the necessary support needed to use the online e-Filing system [33,34]. They are also influenced by the perception of the fit between technology and the lifestyle of the user [9]. The findings from several researchers concluded that there is a strong causal relationship between wireless trust and facilitating conditions [35] whereas facilitating conditions were found to have a direct relationship with infusion and adoption of a number of new information system innovations [36].

G. E-Participation

E-participation is often regarded as an opportunity to handle legitimacy crisis, fostering transparency and facilitating the inclusion of citizens in the political process [37]. Whereas to compare the traditional methods of participation of the citizens the rate declined as today people favour in e-Participation in the form of social networking, chat technologies, discussion forums, group decision support systems and blogs [3]. The combination of motivated actors and improvements in technological infrastructure has resulted in a proliferation of e-Participation projects [4; 38).

IV. RESEARCH DESIGN AND METHOD

A set of questionnaire survey was designed and piloted before the actual set was utilised to collect data and information that could be analysed to test the above hypotheses. Since the Likert scale was most frequently used scale in information system research [39] the scales were utilised as measures of the construct for this study. They were treated as interval scales (shown in Figure 2) arranged from ‘Strongly Positive’ to ‘Strongly Negative’ to categorise the response levels from e-Filing participants.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Fig. 2 Measurement scale

A convenience sampling techniques was adopted the non-probability sampling was utilised to select e Filing users since member of the population does not have an equal chance of selection. In this study quantitative methodology was used and self-administered questionnaires have been adopted to collect data. A total of 600 users of the e-Filing System in Sarawak, Malaysia were selected from randomly chosen business organisations in areas such Kuching, Miri, Sibu and Bintulu. Questionnaires were mailed or personally distributed to business organisations such as Shell Company, Shin Yang Company, libraries, malls, employees of Sarawak University.

Two statistical software packages are used to analyse the data. One was IBM SPSS version 20, and the second is Structural Equation Modelling (SEM) software, namely AMOS was applied to test the relative adequacy of the model’s fit which is essential for this study. After testing the model fit, this work examined the individual path coefficients corresponding to the research hypotheses. SPSS was used to analyse the preliminary data and descriptive analyses on the thesis sample such means and frequencies.

Study samples were asked to circle the response which best described their level of agreement with the statement provided in the Questionnaire Set. From 600 questionnaires collected, 93 were discarded due to missing response items. As such a total number of completed questionnaires were 507.
V. DATA ANALYSIS AND RESULTS

A. Measurement model

A variety of measures were proposed in previous research to assess the relative fit of the data to the model [43,44,45]. The results for this study are shown in Table 1. The recommended values for GFI and CFI should be 0.90 or above [40], while values for the AGFI should be 0.80 or above [41]. Finally, RMSEA should be below 0.10 [42] but has also been suggested to represent a very good fit should RMSEA were below 0.08 [58].

Table 1. Goodness-of-Fit Indices of the initial and refined overall measurement models

<table>
<thead>
<tr>
<th>Goodness of fit indices</th>
<th>Benchmark</th>
<th>Overall measurement model</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMIN/DF</td>
<td>1 to 3</td>
<td>2.680</td>
</tr>
<tr>
<td>GFI</td>
<td>&gt;.90</td>
<td>.841</td>
</tr>
<tr>
<td>AGFI</td>
<td>&gt;.80</td>
<td>.818</td>
</tr>
<tr>
<td>CFI</td>
<td>&gt;.90</td>
<td>.967</td>
</tr>
<tr>
<td>RMSEA</td>
<td>&lt;.08</td>
<td>.062</td>
</tr>
</tbody>
</table>

As shown in Table 1, the value of df is around 2.680, which is below the recommended cut off value of 3.0. The GFI should be at or above 0.90. AGFI is a variant of GFI which adjusts GFI for degree of freedom. The recommended value of AGFI should be 0.80 or above. As shown in Table 1, the GFI value is 0.841 which is below the recommended value. Likewise, AGFI can also fall between 0 to 1 and it is generally accepted value of 0.90 or above [46]. Some researchers had indicated that AGFI should beat or above 0.80 or above [41]. Due to the sensitivity of downward bias of degree of freedom in comparison to small sample size and causes upward bias with large samples [47], the index GFI has become less popular in recent years and it has been recommended that this index should not be used [48] as a measure of goodness-of-fit. In several studies such as in Chang et al. [17]; Hu et al. [49]; Segars and Grover [50] the value for GFI was found to be below 0.80.

Reliability and convergent validity of the factors were estimated by the composite reliability and discriminant validity (see Table 2). Discriminant validity was examined by comparing the shared variances between factors with the average variance extracted of the individual factors [51]. In this study, the shared variance between factors was lower than the average variance extracted of the individual factors, which confirms discriminant validity.

Table 2. Reliability and discriminant validity

<table>
<thead>
<tr>
<th>Factor</th>
<th>CR</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>User satisfaction</td>
<td>0.70</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance Expectancy</td>
<td>0.68</td>
<td>0.04</td>
<td>0.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behaviour Intention to Use</td>
<td>0.89</td>
<td>0.02</td>
<td>0.79</td>
<td>0.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Quality</td>
<td>0.90</td>
<td>0.01</td>
<td>0.86</td>
<td>0.95</td>
<td>0.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilitating Condition</td>
<td>0.70</td>
<td>0.05</td>
<td>0.10</td>
<td>0.15</td>
<td>0.13</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Information Quality</td>
<td>0.91</td>
<td>0.02</td>
<td>0.72</td>
<td>0.82</td>
<td>0.82</td>
<td>0.10</td>
<td>1.00</td>
</tr>
</tbody>
</table>

B. Convergent Validity

As for convergent validity, evidence has been found in which all factor loadings for items measuring the same construct are statistically significant [52,53]. As indicated in Table 3, all factors included high loadings (greater than .50) and were statistically significant (P<0.001). Bagozzi and Yi (1988) [54] recommended that CR should be equal to or greater than .60, and AVE should be equal to or greater than .50. The results of AVE presented in Table 3.

Table 3. Measurement model evaluation

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Standardized Loading</th>
<th>Cronbach’s alpha</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP</td>
<td>EP13</td>
<td>.918</td>
<td>.979</td>
<td>.970</td>
<td>0.823</td>
</tr>
<tr>
<td></td>
<td>EP14</td>
<td>.925</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EP15</td>
<td>.919</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EP16</td>
<td>.903</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EP17</td>
<td>.915</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EP18</td>
<td>.884</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EP19</td>
<td>.884</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**C. Structural model**

In this study, a comparison of the fit indices with their corresponding recommended values provided evidence of the good model fit. After this test the next path is to examine the path coefficients of the structural model. Properties of the causal paths, including standardized path coefficients, t-values and variance explained, for each equation in the hypothesized model are presented in Table 4.

The effect of information quality on user satisfaction was significant at 0.05 level (β₁ = -0.159), thus H1 was not supported. In this aspect, user satisfaction reflects user negative perception satisfaction pertaining to the website information. Therefore, the information at the website did not fulfill users’ needs. H2 was supported as (β₁=0.449). This indicated that a better system quality would lead user for their satisfaction on the system. The results support H3(β₁=0.066) and H4(β₁=0.166) of this study for user satisfaction towards performance expectancy and effort expectancy. This indicated that the system were useful to the users. Whereas, H5(β₁=0.14) on performance expectancy was supported for behaviour intention to use but not H6 (β₁=0.005) for Effort expectancy. Effort expectancy was not supported due to lack of support on the context and task on the system. H7 (β₁=-0.039) also not supported for facilitating condition. The users found their perception towards the new technology is still not convincing and therefore it is necessary to give technical support to the users in order to change the user mind set from using e-filing rather than using manual filing of the income tax form even it is found useful. Hence, H8(β₁=0.229) was supported as users are keen to facilitate the exchange of information at the social networking as it is a new tool of communication.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Path</th>
<th>Beta Value</th>
<th>S.E</th>
<th>t-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>IQ → US</td>
<td>-0.159</td>
<td>0.091</td>
<td>-1.748</td>
<td>Not supported</td>
</tr>
<tr>
<td>H2</td>
<td>SQ → US</td>
<td>0.449</td>
<td>0.057</td>
<td>7.864</td>
<td>Supported</td>
</tr>
<tr>
<td>H3</td>
<td>US → PE</td>
<td>0.066</td>
<td>0.023</td>
<td>2.900</td>
<td>Supported</td>
</tr>
<tr>
<td>H4</td>
<td>US → EE</td>
<td>0.166</td>
<td>0.040</td>
<td>4.200</td>
<td>Supported</td>
</tr>
<tr>
<td>H5</td>
<td>PE → BITU</td>
<td>0.149</td>
<td>0.045</td>
<td>3.303</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Table 4. Hypotheses
VI. DISCUSSION AND CONCLUSION

This research provided several important contributions to the theory. First, the e-Participation literature is expanded through this research, which investigated e-Participation within the facilitation condition context in a non-western country, namely Malaysia. Although studies regarding the outcomes of e-Participation are emerging in the literature, it should not be assumed that findings derived using the western data could be generalised to other regions of the world such as Asia, particularly Malaysia. The findings for this study found that citizens’ e-Participation application with the quality of government responsiveness is positively associated with their decision making, especially exchanging information, feedback and comments through e-Participation. E-Participation application has been advocated as a crucial tool for e-government to facilitate citizens’ participation by offering easier and more effective access to policy information and involvement in administrative decision-making procedures.

Secondly, is the examination of information quality with user satisfaction of the citizens in the context of Malaysia. This study highlighted the phenomena of cumulative experience in the context of Malaysia as a whole and adoption involved citizens of the region as a subject. Therefore in this study website features are highlighted in accordance with the cumulative experience.

Lastly, the results of the study show that tax payers are pessimistic on new technology and technology readiness level especially in Malaysia. It appears that technology readiness is the adoption of the system and low readiness levels lead to low actual usage of e-Filing system.

As far as the information and system quality is concerned, the findings implied that there is a key influential on user satisfaction. Such findings indicated that quality of the technological devices provided in the e-filing website were found complicated and not useful. As compared to western context are different.

There are several limitations to this study. Studies conducted in the form of a survey research in a natural setting are normally accompanied by limitations. One of the limitations is the reliance of the research on self-reported measure in the form of a questionnaire survey as the main source of data. This study depends on the users’ openness and sincerity when completing to the questionnaire.

Secondly, the sample of this study was restricted to individual tax payers. Other tax payers such as companies, employers and tax agents did not take part in this study. Therefore, future research is needed to determine if the results apply to other groups of tax payers. Caution may be needed before generalizing the findings to the whole country in Malaysia.

Thirdly, this study only focuses on e-filing adopters. Non adopters’ perspectives were not collected as it would prove better understanding of the factors contributing to the e-Filing system.

This study assimilates construct from UTAUT with the new construct of e-Participation. The results indicated that e-Participation, Information quality and System quality are the significant indicators for taxpayers’ intention to use the e-Filing system. In order to promote the use of e-Filing, IRBM should provide a user friendly interface and design a suitable information system that are compatible with users’ work style and the government should keep improving the quality of government web sites especially those that provide online services to their citizens. The findings can provide useful recommendations for the development of practice. This study would also enable IRBM to provide guideline for the online services that will meet the needs of their taxpayers in the future in order to enhance the use of the e-Filing system.

REFERENCES


