Factors affecting user satisfaction in the Malaysian income tax e-filing system

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This study attempted to investigate the influence of electronic service quality dimensions on E-filing user satisfaction in the northern region of Malaysia. The data were collected from 175 respondents using survey method. The electronic service quality dimensions used in this study were information quality, system quality, and service quality. Three factors were considered to measure the information quality: accuracy, completeness, and updated information. System quality was measured by four factors namely; functionality, responsiveness, reliability, and flexibility. The service quality was measured by perception of services, trust building, and customization. The findings indicate that information quality and service quality significantly affect: trust building, perception of service, flexibility, information quality: accuracy contribute to user satisfaction income tax e-filing system in the northern region of Malaysia. The system quality has partial impact on user satisfaction as two out of four dimensions of system quality show significant relationship with user satisfaction. The findings should assist Malaysian Inland Revenue Board in formulating new strategies on improving E-filing user satisfaction to achieve their goal of having 80% of Malaysian tax payers to use E-filing in the future. Future researchers should consider other attributes besides the electronic service quality dimension factors to expand this study.

Key words: E-filing, income tax, electronic services, service quality, service satisfaction, Malaysia.

INTRODUCTION

E-filing, since its inception, has generated interest among Government agencies, academicians and researchers. Governments are implementing information and communication technologies (ICT) to enable E-

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Abbreviations: ICT, Information and communication technologies; MSC, multimedia super corridor; IT, information technology; IRBM, Inland Revenue Board of Malaysia; SAS, self assessment system; ITRF, International Terrestrial Reference Frame; PIN, personal identification number; SSL, secure sockets layer; SERVQUAL, service quality in the traditional distribution channels; SPSS, statistical package for social sciences; ANOVA, analysis of variance; VIF, variance factor; FAQs, frequently asked questions.
usage with Singapore, one of the countries that were categorized as “Gold Medalists” in the E-government category, with conceptualization, policies, and implementation of E-government initiatives are characterized as sound and authentic, Malaysia is not far behind as a “Silver Medalist (Mohd, 2003).

In its 10th year after E-filing introduction, 1,002,000 individual taxpayers in Singapore electronically filed their taxes in 2007 as of 18th of April 2007 compared to 915,000 in 2006 (IRAS, 2007). The e-filing application was introduced in February 2006 in Malaysia. Individuals and company taxpayers can submit their International Terrestrial Reference Frames (ITRFs) electronically via the internet. From 2008, e-Filing was extended to non-residents, partnerships, and employers. The Inland Revenue Board of Malaysia (IRBM) has simplified e-Filing and has increased the server capacity to shorten the time that taxpayers need to complete and submit their forms. In 2008, the number of ITRFs filed through e-Filing increased by 35.78% to 1,188,130 compared to 875,051 in 2007 and 236,756 in 2006 respectively.

This exceeds the target of one million e-Filing users set by the IRBM in the third year of its implementation. The electronic submission of ITRFs saves time and cost for taxpayers. The IRBM also reduced printing costs, delivery costs, and scanning costs of the ITRFs. The IRBM now no longer physically (manually) issues ITRFs to taxpayers who had used e-Filing the previous year. Costs savings is estimated at RM 8.17 million in addition to a reduction in the workload of processing physical ITRFs. This shows that e-Filing usage rate in Malaysia is increasing rapidly. The IRBM has been promoting e-Filing with easy, accurate, and safe tax filing. Thus, this study investigates the success of e-Filing system in Malaysia by focusing on electronic service quality dimensions that affect user satisfaction and subsequently measures if users’ perceived net benefits have been realized.

**BACKGROUND OF INLAND REVENUE BOARD OF MALAYSIA (IRBM) AND E-FILING SYSTEM**

IRBM acts as an agent to provide services in assessing, administering, collecting and enforcing the payment of income tax and other taxes that are under the board's jurisdiction. Previously, the tax return is manually processed. Now, IRBM shifts to a new paradigm towards e-Filing due to Self Assessment System (SAS). IRBM introduced e-Filing system on 10th February 2006 to enable taxpayers to submit their tax return through the internet. E-filing transaction has many benefits such as more convenience, fast, accurate and secured in terms of payments. Since its introduction and implementation, the response towards the e-Filing system is very good (Izatun, 2008). A total of 874,814 taxpayers e-filed their tax return in 2007, compared with 186,343 in 2006 (Krishnamoorthy, 2008). However, the number of taxpayers using e-Filing system is far below the expectation. According to an empirical report in newspaper, the user of e-Filing in Malaysia only reached 448,742 users from 6.4 million taxpayers in the country (Izatun, 22nd April 2008, The Star). While, in an exploratory research conducted by Ramayah et al. (2006), the results have shown that many taxpayers did not use e-Filing system to file their tax returns. In 2009, only 1.25 million taxpayers were reported to have filed their tax return through e-Filing (Bernama, 2009).

In the year 2009, the number of taxpayers who submitted their ITRFs electronically increased to 1,553,814. As at 2:00 pm 30th April 2011, the number of e-Filing users has touched 1,682,841, which is a 12.58% increase from the previous year record. According to Ambali (2009), implementation of e-Filing system is expected to provide greater convenience for taxpayers by allowing them to file their tax returns at anytime and from anywhere within the stipulated tax filing period. This study focused on understanding the determinants of e-Filing user satisfaction, to measure users’ perceived net benefits realization, and subsequently to indicate the area of quality dimensions that IRBM to focus on in order to improve the user satisfaction moving forward.

**LITERATURE REVIEW**

This study focused on understanding the determinants of e-Filing user satisfaction, to measure users’ perceived net benefits realization, and subsequently to indicate the area of quality dimensions that IRBM to focus on in order to improve the user satisfaction moving forward. Past literatures on related scholarly models were reviewed to understand the research findings of electronic service quality dimensions that effect user satisfaction and to construct theoretical model. The basis of this study is adapted from DeLone and McLean Information System Success Model for end user satisfaction developed by DeLone and McLean (2003) to measure online service quality with three major dimensions of information quality, system quality and service quality. From information quality perspective, personalization, completeness, relevance, easy of understanding, and security quality dimensions are used to measure electronic information system content issue (DeLone and McLean, 2004). System quality measures refers to the desired characteristics of electronic information system by using usability, availability, reliability, adaptability, and response time quality dimensions (DeLone and McLean, 2004). Subsequently, service quality or in another words, overall support delivered by the service provider towards electronic information system, are measured using assurance, empathy, responsiveness quality dimensions (DeLone and McLean, 2004). The electronic information system impact measures are grouped into net benefits variables, where this is used to capture the balance of positive and negative impacts of the electronic information system on users and other stakeholders.
where cost savings, expanded markets, incremental additional sales, reduced search costs, and time savings are used constructs of measurement (DeLone and McLean, 2004).

**User satisfaction**

Satisfaction is the difference between a product's perceived performance in delivering value relative to a buyer's expectation before a product is purchased (Nor and Yusniza, 2009). User satisfaction is a critical issue in the success of any business system either traditional business or online business.

Ambali (2009) 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 only indicate moderate level. He also said that the overall level of the e-Filing usage among taxpayers is still low, despite many campaign activities by IRBM to increase the level of e-Filing usage in the country.

This finding is very similar to the statistical reports on the usage record for the previous years and also is in line with similar disappointing numbers of the e-Filing users reported by Izatun (2008). In order to make sure e-Filing system can fully satisfied users, the technology system used by IRBM must has this criteria: usefulness, ease of use, facilitating conditions and security and users' intention to continue using the e-Filing system.

According to Zaherawati et al. (2009), perception towards e-Filing of the tax payers' perception towards e-Filing is influenced by the way they identify the usefulness of the e-filing system which is perceived usefulness.

**Information quality**

From information quality perspective, personalization, completeness, relevance, easy of understanding, and security quality dimensions are used to measure electronic information system content issue (DeLone and McLean, 2003). While, based on Chang et al. (2005), information quality has been defined by the degree to which users are provided with quality information regarding their needs.

In practices, the e-Filing system benefits taxpayers because tax returns are sent electronically to the IRBM which saves taxpayers’ time and also in this system, promotion campaign, the tagline 'easy to use, accurate and safe to use were used (Anna and Ng, 2010). As a user of e-Filing system, we need a convenience and usefulness services in order to get quality information, so IRBM should increase the use of information and communication technologies to improve the delivery of public services and dissemination of public administration information to the public.

**System quality**

System quality measures refers to the desired characteristics of electronic information system by using usability, availability, reliability, adaptability, and response time quality dimensions (DeLone and McLean, 2004). Although, adoption of e-Filing systems may seem to benefit taxpayers in many ways and also offer potential benefits to improve administrative commitments towards efficiency and quality of service delivery, but the understanding and influencing citizens' acceptance of the electronic system is still critical. According to Ambali (2009), in line with the era of fast moving world, better services from respective governments or agencies to their citizens are highly needed. Therefore, creating a fast, reliable and safe service should be the main priorities of any governments in the world. Thus, adapting technology into the public service delivery systems is one of the ways to create such a fast reliable and safe service delivery.

**Service quality**

Service quality or in another words, overall support delivered by the service provider towards electronic information system, are measured using assurance, empathy, responsiveness quality dimensions (DeLone and McLean, 2004). Service quality is the key to measure user satisfaction (Pitt et. al., 1995). As a user, the most important aspect of service quality in e-Filing system is security. As stressed out by IRB CEO, the e-Filing system is secure and it is difficult to get into anyone’s personal tax file because they need to enter personal identification number (PIN) and a password (The Star Online, April 27th, 2007). Besides a digital certificate, IRB could employ multiple firewalls, use the latest anti-virus and worm detection software and all internet transmissions should use Secure Sockets Layer (SSL) encrypted security measures. Meanwhile, in Malaysia, the adoption of the electronic tax-filing is voluntary. Anna and Ng (2010) suggested that a system that is usefulness and easy to use are important for taxpayers to voluntarily e-file their tax returns. Thus, the government should increase its efforts to promote the usefulness and user-friendliness of the e-Filing system.

There are several studies conducted to develop measurement instruments for electronic service quality in the area of online retailing service quality, web site design quality, and online service quality. Parasuraman et al. (2005) did a study on internet service quality based on their earlier research on service quality in the traditional distribution channels (SERVQUAL), and develop E-S-QUAL scale based on the 7 dimensions. Those 7 dimensions are split into two separate scales of core dimensions and the recovery dimensions, where the E-S-QUAL refers to core dimensions of efficiency, system availability, fulfillment, and privacy and the second scale
is titled E-RecS-QUAL and measures the internet service quality dimensions of responsiveness, compensation, and contact (Parasurama et al., 2005). Yoo and Donthu (2001) contributed to electronic service quality measurement by developing a scale called SITEQUAL which consists of four dimensions: ease of use, aesthetic design, processing speed, and interactive responsiveness. Following that, Wolfinbarger and Gilly (2002) developed COMQ, an e-service quality instrument which later evolved to e-TailQ with quality dimensions of Web design reliability, security, and customer service. Other than that, Loiacono et al. (2002) also have developed an e-service quality instrument called WEBQUAL which comprised of 12 dimensions: information, interactivity, trust, response time, web site design, intuitiveness, flow, innovativeness, integrated, communication, business process, and sustainability.

Ming et al. (2005) have examined the usage intentions, attitudes, perceptions and compliance considerations of Malaysian tax practitioners towards e-Filing system in Malaysia. Ramoo (2006) has done a research to understand the determinants of perceived ease of use among tax payers using e-Filing and to understand the role of ease of use on intention to use e-Filing in Malaysia. E-government G2C internet based applications are fit to be studied using the updated DeLone and McLean information system success model (Wang and Liao, 2007). E-filing is one of the E-government G2C effort in Malaysia which is internet based. Thus, the theoretical framework for this study was derived by adapting updated DeLone and McLean information system success model. Information quality, system quality, and service quality are the key determinants of user satisfaction. Subsequently, user satisfaction will be analyzed if it has positive relationship with users’ perceived net benefits and effect of technology readiness on relationship between electronic service quality dimensions and user satisfaction in e-Filing. Table 1 summarizes about the e-service quality instruments which discussed above.

As discussed earlier, e-Filing system in Malaysia have successfully attracted 874, 814 users to file their taxes online in 2007, in the second year itself compared to Singapore where it took 10 years to attract 1,002,000 (as of 18th April 2007) users. Thus, intention to use and use of e-Filing assumed not to be major concerns for e-Filing in Malaysia. Thus, use and intention to use variable were excluded from this study theoretical framework. Besides that, the feedback link from net benefit to user satisfaction was excluded to avoid model complexity. Based on the above literature, in line with research objective the following hypotheses are tested:

H1: Information quality is positively related to user satisfaction.

H1b: Completeness of information is positively related to user satisfaction.

H1c: Information update is positively related to user satisfaction

H2: System quality is positively related to user satisfaction.

H2a: Functionality of system is positively related to user satisfaction.

H2b: Responsiveness is positively related to user satisfaction.

H2c: Reliability is positive related to user satisfaction.

H2d: Flexibility is positively related to user satisfaction.

H3: Service quality is positively related to user satisfaction.

H3a: Perception of service significantly affects user satisfaction.

H3b: Trust building is significantly affects user satisfaction.

H3c: Customization in service quality significantly affects user satisfaction

H4: There is a positive relationship between user satisfaction and net benefits achieved through e-Filing system

RESEARCH METHODOLOGY

This is a correlation study and was conducted among e-Filing users working in public sector, private sector, and also self employed users under the natural environment in the Northern regions of Malaysia (Kedah, Perlis and Penang) where the variables were neither controlled nor manipulated. Hypothesis testing was applied to explain the factors affecting user satisfaction on income tax e-Filing system. The survey method used to gather information to empirically test the research model developed. Individual tax practitioner is treated as unit of analysis in this study. Three independent variables namely information quality, system quality and service quality were selected to determine factors that contribute to user satisfaction of income tax e-Filing system. User satisfaction was used as a dependent variable. The study then expanded to test whether user satisfaction leads to net benefits in using the e-Filing system. The sample size was based on ten-to-one ratio proposed of the independent variables by Hair et al. (1998).

Sekaran (2006) mentioned probability sampling design can be used when the elements in the population have a known chance of being chosen as subjects in the sample. This study used convenient sampling method to obtain sufficient number of respondents due to non availability of Malaysian tax payers list to do probability sampling. Total of 300 questionnaires distributed via hardcopy. Colleagues, friends and relatives were notified via electronic mail to respond to the electronic survey. The practitioners are adopted from various literature of Stockdale and Borovick (2006), Saha and Zhao (2005), Aladwani and Palvia (2001), and Parasuraman (2000) and tailored to meet the objective of this study. In section A, the demographic variables were measured by using nominal scale and from section B until L, the variables are measured by using 5-point interval scale to measure the attitude ratings with 1 is rated as strongly disagree, 2 as disagree, 3 as neutral, 4 as agree and 5 as strongly agree.
Table 1. Summary of E-service quality instruments.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Author</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-S-QUAL</td>
<td>Parasuraman et al. (2005)</td>
<td>Efficiency, system availability, fulfillment, and privacy.</td>
</tr>
<tr>
<td>E-RecS-QUAL</td>
<td>Parasuraman et al. (2005)</td>
<td>Responsiveness, compensation, and contact.</td>
</tr>
<tr>
<td>SITEQUAL</td>
<td>Yoo and Donthu (2001)</td>
<td>Ease of use, aesthetic design, processing speed, and interactive responses.</td>
</tr>
<tr>
<td>WEBQUAL</td>
<td>Loiacono et al. (2002)</td>
<td>Information, interactivity, trust, response time, web site design, intuitiveness, flow, innovativeness, integrated, communication, business process, and sustainability.</td>
</tr>
</tbody>
</table>

The data collected via questionnaires were analyzed by using Statistical Package for Social Sciences (SPSS) software for Windows. Factor analysis and reliability analysis were used as part of goodness of measures. Factor analysis was run on dependent and independent variables separately to determine if the number of questionnaires items can be reduced to meaningful, interpretable, and manageable set of factors (Sekaran, 2006). Reliability analysis computed Cronbach’s alpha, which indicated the internal consistency and reliability of measuring the scales of variable (Sekaran, 2006).

The scores range from 0 to 1 where higher score indicates higher reliability with Cronbach’s alpha value of 0.7 and above were accepted to be reliable (Nunnally and Bernstein, 1998). Multiple regression analysis was executed to find out the effect 2 or more independent variables on a single-scaled dependent variable (Zikmund, 2000). There were two multiple regression analyses used find out the effect of independent variables (system quality, information quality, and service quality) on user satisfaction, and the effect of user satisfaction on users’ perceived net benefit.

RESULTS

Profile of respondents

A total of 175 responses were obtained from 300 questionnaires that were distributed. From 175 e-Filing users that responded to this survey via hardcopy and electronically, 50.9% were male and 49.1% were female. 49.7% of 175 respondents were Malays, 25.7% were Indians, 15.4% were Chinese, and 9.1% were comprised of other races.

Other than that, 34.9% of the respondents were below 30 years old, 55.4% were between 30 and 45 years old, and 9.7% were between 46 and 55 years old. On education level of the respondents, 1.1% was secondary school leavers, 7.4% were diploma holders, 6.3% were professional certificate holders, 44.0% were bachelor degree holders, 30.3% were master degree holders, and 10.9% comprised of Ph.D holders.

In terms of employment, 54.3% were attached to public sector, 35.4 were from private sector, and 10.3% was self employed. In terms of state of residence, 40.0% of the respondents were from Perlis, 29.1% were from Kedah, and the rest of 30.9% were from Penang.

Out of 175 respondents, 100% of the respondents have filed their taxes via e-Filing in the previous year, as well as this year. All of the 175 respondents committed to submit their income tax filing via e-Filing next year.

Goodness of measures

Factor analyses and reliability test were employed to measure the relevance of independent variables and dependent variable, and the internal consistency of the data. Correlations analysis was then employed to measure the discriminant and predictive validity. The following section presents the results of the factor analyses, reliability test and the correlations analysis.

Factor analyses

Factor analyses were conducted to confirm existence and relevance of the independent variables (system quality, information quality, and service quality), and dependent variable (user satisfaction and users’ perceived net benefits) variables. The factor analyses were diagnosed and found to have met the necessary statistical assumptions as indicated by their high Kaiser-Meyer-Olkin measure in conjunction with the diagonals of the anti-image correlation matrix possessing values above .5. Sufficient unique loadings (for more than one extracted factor) and ability for each item to account for a minimum of 50% of its variation were conditions set in retaining the items.

The examination of the 10-factor solution of this study’s independent variables revealed a combined total variance explained of 53.92%. Majority of the variation was taken up by system quality: flexibility (17.89%), followed by system quality: functionality (8.0%), system quality: reliability (4.93%), information quality: completeness (4.33%), system quality: reliability (3.93%), service quality: trust building (3.34%), service quality: perception of service (2.19%), system quality: responsiveness (2.11%), service quality: customization (1.62%), information quality: completeness (1.59%), and finally information quality: accuracy (1.24%).
Table 2. Results of correlations analysis.

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Information quality: Accuracy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2 Information quality: Completeness</td>
<td>0.350**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3 Information quality: Updated</td>
<td>-0.205**</td>
<td>-0.023</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4 System quality: Functionality</td>
<td>0.452**</td>
<td>0.342**</td>
<td>-0.324**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5 System quality: Responsiveness</td>
<td>0.179*</td>
<td>0.184*</td>
<td>0.022</td>
<td>0.204**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6 System quality: Reliability</td>
<td>0.446**</td>
<td>0.288**</td>
<td>-0.184*</td>
<td>0.550**</td>
<td>0.267**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7 System quality: Flexibility</td>
<td>-0.180*</td>
<td>0.187*</td>
<td>0.711**</td>
<td>-0.233**</td>
<td>0.222**</td>
<td>-0.040</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8 Service quality: Perception of Service</td>
<td>0.219**</td>
<td>0.379**</td>
<td>0.204**</td>
<td>0.158*</td>
<td>0.283**</td>
<td>0.455**</td>
<td>0.436**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9 Service quality: Trust building</td>
<td>0.253**</td>
<td>0.324**</td>
<td>0.285**</td>
<td>0.149*</td>
<td>0.238**</td>
<td>0.266**</td>
<td>0.392**</td>
<td>0.363**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10 Service quality: Customization</td>
<td>0.086</td>
<td>0.280**</td>
<td>0.345**</td>
<td>-0.202**</td>
<td>0.092</td>
<td>0.032</td>
<td>0.552**</td>
<td>0.440**</td>
<td>0.438**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11 User satisfaction</td>
<td>0.415**</td>
<td>0.491**</td>
<td>0.271**</td>
<td>0.323**</td>
<td>0.417**</td>
<td>0.470**</td>
<td>0.428**</td>
<td>0.702**</td>
<td>0.602**</td>
<td>0.446**</td>
<td>-</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05 level (2-tailed).

Reliability analysis

The reliability test was conducted on the data. The Cronbach’s Alpha value used to test the reliability of the items measuring each of the independent variables (system quality, information quality, and service quality), moderating variable (technology readiness) and dependent variables (user satisfaction and users' perceived net benefits) variables.

All dimensions in this study have high levels of reliability and are well above the cut-off value of 0.70 as suggested by Nunnally and Bernstein (1994) with the lowest registering a value of 0.764 (system quality: responsiveness) and the highest 0.971 (information quality: completeness). The rest of the variables system quality: flexibility (0.904), system quality: functionality (0.939), service quality: perception of service (.887), service quality: customization (0.918), information quality: accuracy (0.880), information quality: current (0.845), system quality: reliability (0.892), service quality: trust building (0.902), user satisfaction (0.862), net benefit (0.958), user readiness (0.905), have satisfactory alpha value.

Discriminant and predictive validity (Based on correlation table)

Two-tailed Pearson correlation tests were employed to assess discriminant validity of the variables. All independent variables were found not to be too highly correlated among themselves, which is the prerequisite condition for removing concerns about multicollinearity problems prior to conducting multiple regression analysis in the subsequent section. In terms of predictive validity, the matrix in Table 2 shows that the significant variables which can warrant further multiple regression analyses. Visual inspection of their values suggests that information quality (accuracy, updated, and completeness), system quality (functionality, responsiveness, reliability, and flexibility), and service quality (perception of service, trust building and customization) have significant correlations with user satisfaction in the Malaysian income tax e-filing system.

Multiple regressions

Multiple regression testing was used to test the hypothesis in this study. The first regression was run to determine the relationship between independent variables toward dependant variable (user satisfaction). From the output of regression from the analysis of variance (ANOVA) Table 3, the variables were tested significant with (p<.01) and F = 56.616. The regression tests had presented a strong inference with R square of 0.79. The adjusted R² value is 0.76.

The Durbin-Watson value of 1.798 was confined to the acceptable (1.5 to 2.5). It indicated that there was no autocorrelation of error terms. Multicolinearity problems did not exist as the variance factor (VIF) values were below 10 and the condition indices were below limit of 30. The normality of the sample was demonstrated by a bell shape histogram. Diagnosis of the scatter showed homoscedasticity (constant variance of error term). P-P plots also indicated no sign of normality of the error. No clear relationship between residuals and the predicted values confirmed the assumption of linearity. The multiple regression analysis indicated that the following tested variable were highly significant at p<0.01 - a 99% degree of confidence. The beta value (standardized coefficients) of information quality: accuracy (0.16) and updated (0.18); system quality: functionality (0.26) and responsiveness (0.16); service quality: perception of service (0.37) and trust building (0.23) shows that these independent variables are positively related to E-filing...
Table 3. Result of multiple regression 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information quality - Accuracy</td>
<td>0.14***</td>
</tr>
<tr>
<td>Information quality – Completeness</td>
<td>0.09**</td>
</tr>
<tr>
<td>Information quality – Updated</td>
<td>0.18***</td>
</tr>
<tr>
<td>System quality - Functionality</td>
<td>0.16***</td>
</tr>
<tr>
<td>System quality - Responsiveness</td>
<td>0.16***</td>
</tr>
<tr>
<td>System quality – Reliability</td>
<td>0.05</td>
</tr>
<tr>
<td>System quality - Flexibility</td>
<td>0.04</td>
</tr>
<tr>
<td>Service quality – Perception of service</td>
<td>0.37***</td>
</tr>
<tr>
<td>Service quality – Trust Building</td>
<td>0.23***</td>
</tr>
<tr>
<td>Service quality – Customization</td>
<td>0.09*</td>
</tr>
<tr>
<td>F</td>
<td>56.62***</td>
</tr>
<tr>
<td>R²</td>
<td>0.778</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.764</td>
</tr>
</tbody>
</table>

Note: ***p<.01, **p<.05, *p<.10

Table 4. Result of multiple regression 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>User satisfaction</td>
<td>0.36***</td>
</tr>
<tr>
<td>F</td>
<td>25.62</td>
</tr>
<tr>
<td>R²</td>
<td>0.131</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.126</td>
</tr>
</tbody>
</table>

Note: ***p<.01, **p<.05, *p<.10

user satisfaction. This highest beta value shows the highest priority of quality dimension that related positively to user satisfaction and vice versa. Information quality: current was also found significant at p<0.1 with the beta value of 0.10 shows this independent value is positively related to e-Filing user satisfaction.

Thus, hypothesis 1 (Information quality is positively related to user satisfaction.) was accepted as all three of the information quality (accuracy, completeness and updated) constructs were found to be positively related to e-Filing user satisfaction. Hypothesis 2 (system quality is positively related to user satisfaction) was partially accepted as only two of the system quality (functionality and responsiveness) constructs found out of four to be positively related to e-Filing user satisfaction. On the hypothesis 3 (Service quality is positively related to user satisfaction) was accepted as all three of the service quality (perception of service, trust building, and customization) constructs were found to be positively related to e-Filing user satisfaction.

The second regression was run to determine the relationship between user satisfaction and users’ perceived net benefits. Hypothesis 4 was tested at this stage. From the output of regression from the ANOVA Table 4, the variables were tested significant with (p<0.01) and F = 25.62. The regression tests had presented inference with R square of 0.13. The adjusted R² value is 0.12. The Durbin-Watson value of 2.032 was confined to the acceptable (1.5 to 2.5). It indicated that there was no autocorrelation of error terms. Multicollinearity problems did not exist as the VIF values were below 10 and the condition indices were below limit of 30. The normality of the sample was demonstrated by a bell shape histogram. Diagnosis of the scatter showed homoscedasticity (constant variance of error term). P-P plots also indicated no sign of normality of the error. No clear relationship between residuals and the predicted values confirmed the assumption of linearity.

The multiple regression analysis indicated that the following tested variable were significant at p<.01 - a 99% degree of confidence. The beta value (standardized coefficients) of convenience (0.36), shows that this e-filing user satisfaction is positively related to convenience. Hypothesis 4 (User satisfaction is positively related to user perceived net benefits) was accepted at P<0.1.

DISCUSSION

The study has shown that service quality: perception of service has the strongest positive relationship with user satisfaction. This indicates that perception of service is the most critical electronic quality dimension that users have rated. This is in line with previous studies conducted by Wang and Liao (2007) on Taiwan E-government G2C systems. Service quality: trust building has second strongest positive relationship with user satisfaction followed by information quality: updated; and system quality: responsiveness and functionality. These are the critical electronic quality dimensions influence e-Filing user satisfaction. These finding are in line with previous study by Wang and Liao (2007), Roldan and Leal (2003), Swaid and Wigand (2007) and Pikkarainen et al. (2006).

System quality: reliability and flexibility did not show any influence on user satisfaction. Of all the quality dimensions measured, system quality: perception of service was the most salient determinant of user satisfaction. Snapshot of the current e-Filing electronic quality dimensions rate shows information quality: accuracy and system quality: functionality has achieved good rating from respondents with mean value exceeding 4 and having standard deviation of 0.66 and 0.74, respectively. This shows that e-Filing serves accurate information to respondents and e-Filing system functionality meets respondents’ requirement. Since information quality: accuracy is found to have positive relationship with user satisfaction, IRBM should maintain this advantage. On the other hand, service quality: customization and system quality: flexibility; and information quality: updated are the weakest areas by hitting the mean of 2.77, 2.70 and 2.60 with having
standard deviation more than 0.98, 0.93 and 0.96 respectively. Since information quality: updated is found to have positive relationship with user satisfaction, IRBM should take appropriate action to ensure the information at the e-Filing web site is up to date to achieve good user satisfaction moving forward. This study also found out that user satisfaction has positive relationship with both users’ perceived net benefits. This is in line with past findings by Roldan and Leal (2003), Ebrahim and Irani (2005) and Ming et al. (2005). The regression tests had presented a strong inference with R square of 0.78. Approximately 78% variations of e-Filing user satisfaction can be explained by information quality, system quality, and service quality dimensions used in this study.

**IMPLICATIONS**

The implication of this study could be examined in a managerial and policy perspectives to form effective strategies to sustain the current e-Filing users by taking appropriate action(s) to improve user satisfaction among Malaysian tax payers to achieve the IRBM goal to increase the e-Filing usage moving forward. 100% of the respondents have used e-Filing before and 96.8% of them have filed their income taxes via e-Filing this year. All respondents have committed to file their income taxes via e-Filing next year despite of average user satisfaction rate with the mean of 3.58. This indicates that by having careful strategy implementation by the government, e-Filing can achieve higher user satisfaction rate. The findings of this study have indicated service quality: trust building, service quality: perception of service, system quality: flexibility, information quality: accuracy and information quality current as significant factors influencing user satisfaction.

As discussed earlier, only information quality: accuracy has achieved a mean above value of 4 and information quality: current has achieved the weakest mean, followed by system quality: flexibility. Service quality: trust building and service quality: perception of service has achieved an average mean between value of 3 and 4. Potential improvement in the weakest area followed by moderate areas will definitely help to improve e-Filing user satisfaction moving forward. As a start, IRBM can allocate dedicated staff to update the web site in timely manner. When the updates are made, IRBM staff can show date and details of the update and place the updates consistently at the same place of web site for convenience viewing rather than users browsing over. Other than that, IRBM also can display the validity of the user registration pin number and expiry date after the login screen to enable users to renew the pin accordingly. In area of flexibility, IRBM can start looking at possibility of extending language options other than Bahasa Melayu, have adequate search facilities, and have alternate URL of e-Filing for users to access in case of the e-Filing web site is down. In terms of perception of service, IRBM can look into providing “one stop” service for e-Filing where proper guide are placed at the right place (that is, place the tax calculation formula in the right screen that users need the information to file their taxes rather than searching all over the web site), providing past year statements, ability to request for refund and etc.. Other than that, IRBM can also look into improving helpdesk service, improving the depth of current Frequently Asked Questions (FAQs). Malaysian government should continue to encourage computer literacy among the Malaysians to prepare them for electronic transactions. That is, EPF loan availability and tax deduction for computer purchase will definitely encourage computer literacy advancement. Apart from that, IRBM also can improve their service in terms of trust building to provide proper assurance for users to use e-Filing. IRBM needs to ensure information security exists that no one could see others’ private and confidential information through e-Filing. Other than that, IRBM also can provide transaction number for every successful and unsuccessful transaction for users to refer to when seek for help from IRBM. The other potential area that IRBM can improve the awareness is to have annual e-Filing road show in the universities and colleges for final year students, where those students are the potential tax payers and e-Filing users in short run.

**Conclusion**

The findings of the research conclude that information quality: accuracy, completeness and updated; service quality: perception of service, trust building and customization; system quality: functionality and responsiveness are determinants of e-Filing user satisfaction in Malaysia. Other than that user satisfaction is found to be significant in affecting users’ perceived net benefits of using e-Filing in Malaysia. The findings provided by the study may give empirically justified foundation for the government to develop strategies to improve quality dimensions for e-Filing web site. Future researchers can consider on other attributes besides the electronic service quality dimension factors to improve this study and to address the limitations. As such, it is hoped that this study will give a preliminary insight and understanding on the tax payers’ user satisfaction of e-Filing from electronic quality perspective. Despite the useful findings of this study, this empirical study has several limitations that need to be acknowledged. Firstly, the findings cannot be generalized extensively in Malaysia as the study was confined into the northern regions, therefore caution may be needed before generalizing the findings to the whole country.

Finally, as this model accounted for only 53.92% of the variance indicating variables, variables other than examined in this study are needed to explain additional variance.
REFERENCES


