eJournal of Tax Research

Volume 2, Number 1 2004

CONTENTS

Atax
UNSW
Faculty of Law

ISSN 1448-2398

eJournal of Tax Research (2004) vol. 2, no. 1, pp. 100-112

Towards An Electronic Filing System: A Malaysian survey[+]

Ming-Ling Lai [*], Siti Normala Sheikh Obid[†] and Ahamed Kameel Meera[‡]

Abstract

This paper examines the level of technology readiness of Malaysian tax practitioners and their usage intentions towards an electronic filing system. A questionnaire survey was administered to 572 tax practitioners. The survey indicates that 31.3% of the respondents are somewhat techno-ready and 9.4% are highly techno-ready. By and large, tax practitioners are optimistic in new technology and have strong usage intentions; nonetheless, they are wary of the security of Internet technology. Multiple regression analysis reveals that there is a significant positive relationship between the level of technology readiness and the usage intentions towards the e-filing system.

INTRODUCTION

The Inland Revenue Board Malaysia (the IRB) is currently streamlining the tax filing process through the use of information and communication technology (ICT) and is working to reform tax administrative policies to embrace an electronic income tax filing system (MIA, 2000; SGATAR, 2001). The main objectives of the IRB in embracing an electronic filing (e-filing) system are to facilitate tax compliance and to provide improved taxpayer service through administrative improvement.

Basically, the e-filing system encompasses the use of Internet technology, the Worldwide Web and tax software for a wide range of tax administration and compliance purposes. The chief advantage of an e-filing system is that it integrates tax preparation, tax filing and tax payment. With the e-filing system, taxpayers and tax practitioners can file income tax returns electronically via the enabling technologies, rather than through mail or by physically visiting the tax office. This may eventually make the art of tax filing and tax payment easier. The e-filing system may offer potential benefits to improve administrative compliance efficiency, but the benefits gained may be obstructed by tax users' unwillingness to accept and use the available electronic services. Learning from the experience of overseas tax agencies, the move to embrace an e-filing system is not hassle free and is not well accepted by all parties. Worldwide, tax users' resistance and under utilization of the e-filing system remains a

[+] An earlier version of this paper was presented at the Asia-Pacific Business Environment Conference: Innovative Responses to Regional Issues, on 21-22 January 2003 at Concorde Hotel, Shah Alam, Malaysia. The conference was co-organised by Faculty of Business and Management, MARA University of Technology and Auckland University of Technology, New Zealand. In addition, the authors would like to express their deepest appreciation to the survey participants and the anonymous reviewers.

[*] Lecturer, Faculty of Accountancy, MARA University of Technology Malaysia

[†] Assistant professor, Department of Accounting, International Islamic University Malaysia

[‡] Associate professor, Department of Business and Administration, International Islamic University Malaysia

great concern and it still plagues various tax agencies who are embracing electronic tax administration systems (AccountingWeb, 2002; ETAAC, 2002).

Prior studies found that tax practitioners are an important third party in tax compliance settings, as tax practitioners have the acquired technical knowledge and professional experience in liasing with tax agencies relative to an ordinary taxpayer (Burnett, 1998; Newsberry, Reckers and Wyndelts, 1993). As a result, tax practitioners are able to exercise a strong and direct influence on the tax compliance and administration process (Erard, 1993). Particularly, in fear of penalty, many taxpayers turn to tax practitioners for help under the self-assessment regime (Kocakulah and Grower, 2000). For instance, in the United States, the tax authority is counting on tax practitioners to promote the e-filing system (ETAAC, 2002; Kahan, 1998). In a similar vein, the IRB is also counting on local tax practitioners to promote the e-filing system. Undoubtedly, an e-filing system can only work effectively with the assistance and cooperation of tax practitioners.

Even though the e-filing system is an inevitable progression in the Malaysian tax environment in the foreseeable future, there has been little scholarly research to date pertaining to the e-filing system related to Malaysian tax settings. It is unclear whether Malaysian tax practitioners are ready to embrace the e-filing system. Hence, the move by the IRB to embrace the e-filing system has motivated this study. This study aims to (i) examine the level of technology readiness of Malaysian tax practitioners, (ii) ascertain their usage intentions of the e-filing system, (iii) assess if there is any difference in technology readiness dimensions across gender and age groups and (iv) explore if there is a relationship between technology readiness and usage intentions towards the e-filing system.

LITERATURE REVIEW

Previous studies found that a combination of positive and negative beliefs about technology underlies the domain of technology readiness (Dabholkar, 1994; Mick and Fournier, 1998). In particular, Dabholkar (1994) found that individuals simultaneously harbour positive (favourable) and negative (unfavourable) beliefs about technology. The positive beliefs propel individuals towards new technologies, while negative beliefs may hold them back.

Mick and Fournier (1998) highlighted eight "paradoxes" of technology with which IT consumers have to cope: control/chaos, freedom/enslavement, new/obsolete, competence/incompetence, efficiency/inefficiency, fulfilment/creation of needs, assimilation/isolation, and engagement/disengagement. All these paradoxes implied that technology might trigger both positive and negative beliefs. An individual can be a technology "innovator", dare to experiment, but still be sceptical about the benefits of technology, or can believe strongly in technology but also be wary of its security (Parasuraman, 2000).

Parasuraman and Colby (2001, p.48) defined technology readiness (TR) as "people's propensity to embrace and use new technologies at home and at the workplace". They analysed the positive and negative belief about technology into four distinct technology readiness dimensions: (1) optimism, (2) innovativeness, (3) discomfort and (4) insecurity. The four TR dimensions are defined as follows:

- *Optimism*: The optimism facet is defined as a positive view of technology and beliefs in the benefits of technology in increasing job efficiency and enhancing people's lives at work and at home.
- *Innovativeness*: The innovativeness dimension refers to the extent to which a person believes that he or she is a thought leader, and at the forefront of trying out new technology-based products/services.
- *Discomfort*: Discomfort refers to a perceived lack of control over technology and a feeling of lack of confidence in using the new technologies properly.
- *Insecurity*: Insecurity is defined as distrust of technology-based transactions and scepticism about its ability to work effectively.

In the United States, during the period 1999/2000, a nationwide telephone survey was conducted on 1,001 American adults. The American National Technology Readiness Survey (NTRS) was based on a random sample of American adults (18 years or older). The survey reported that that the mean score on a 5-point scale for each of the four TR dimensions were 3.8 for optimism, 3.2 for innovativeness, 3.5 for discomfort and 4.0 for insecurity perceptions (NTRS, 2000; Parasuraman, 2000). In the same survey, the results indicated that American adults were optimistic about new technology; nonetheless, they were also wary of Internet security. The findings further revealed that there were no significant differences in optimism and insecurity perceptions between genders; both male and female adults were positive about technology, and were concerned by the insecurity of Internet technology.

In addition, the results of the NTRS (2000) found that American males appeared to be more innovative than the females, and American females experienced greater discomfort with new technology as compared to the males1. The survey also found that older people tend to be less optimistic and less innovative about new technology as compared to younger participants. At the same time, older participants perceived more discomfort with new technology as compared to the younger ones. However, the views pertaining to insecurity varied little across age groups.

Parasuraman and Rockbridge Associates, Inc developed the Technology Readiness Index (TRI) to measure technology readiness. According to TRI, the combination of scores on the four TR dimensions represents a person's overall technology readiness. The first two TR dimensions, 'optimism' and 'innovativeness' are the 'contributors' that may increase an individual's technology readiness while the other two TR dimensions 'discomfort' and 'insecurity' are 'inhibitors' that may suppress technology readiness. Parasuraman (2000, p.317) stated that the TRI is "a multiple-item scale with sound psychometric properties that can be used to gain an in-depth understanding of the readiness of technology customers (both internal and external) to embrace and interact with technology, especially computer/internet-based technology".

Parasuraman (2000) and Parasuraman and Colby (2001) highlighted that technology readiness is an overall state of mind and not a measure of competency. In brief, there are three important components of technology readiness. First, technology readiness varies from one individual to another. Anyone can be a consumer of a technology, but

[1] One plausible explanation for such a finding was attributed to the education system in United States. Traditionally, more male students were selected to pursue computer sciences and IT related courses than females (Parasuraman and Colby, 2001).

some may seek technology actively, whilst others may need special help or coaxing. Second, technology readiness is multifaceted. Third, technology readiness can be used to predict and explain consumers' responses towards new technologies.

Extant studies provide support that the TRI scale is capable of capturing the relationship between technology readiness and technology usage behaviours (NTRS, 2000; Parasuraman and Colby, 2001). Empirical findings indicate that technology readiness correlates with actual use and intention to use the technology-based products and services in varying degrees (Parasuraman and Colby, 2001). Notably, an individual with a higher level of technology readiness has higher usage intention and more experience in using the technology based products and services in varying degrees. Similarly, prior studies by Dabholkar (1994) and Mick and Fournier (1998) also demonstrated that information technology/information system (IT/IS) consumers with more positive beliefs are more receptive and ready to use the various new technologies.

Agrawal and Prasad (1999) found that individual differences influence an individual's beliefs and usage intention of the new ICT. Zmud (1979) defined individual differences as any dissimilarity across people, including differences in cognitive style, personality, and demographic variables. Meanwhile, Fishbein and Ajzen (1975) defined usage intention as a measure of the strength of one's intention to perform a specific behaviour. Sheppard, Hartwick, and Warshaw (1988) found individuals' actual behaviour could be predicted reasonably well from their intentions. Subsequently, several studies, for example Davis, Bagozzi, and Warshaw, (1989), Jackson, Chow, and Leith (1997) and Chau and Hu (2001), indicated that usage intentions of IT/IS are reasonable indicators of future system use.

RESEARCH METHOD

A survey method was used in this study. The questionnaire comprised of four sections. Section A gathered background and demographic information about the respondents. Section B asked respondents to indicate their general perceptions towards new information and communication technology on the following dimensions: optimism, innovativeness, discomfort and insecurity2. Respondents were asked to indicate their opinion on a scale of 1 (strongly disagree) to 5 (strongly agree). Section C was designed to assess the respondents' usage intentions of the e-filing system on the 7-point Likert scale, anchored on 1 (strongly disagree) to 7 (strongly agree). Two questions were adapted from Davis (1989) to measure the usage intentions. Section D contained open ended-questions.

The questionnaire was subjected to two pre-tests. The questionnaire was pre-tested with 8 professionals, and the pilot test was carried out on 35 tax practitioners. Systematic sampling method was used and the sample was limited to tax practitioners who were public accountants authorised by or under written law to be an auditor or person in authority such as the tax partner, tax director or tax manager working in the audit firms registered with the Malaysian Institute of Accountants (MIA) as at 31 July 2002. The survey questionnaire was posted to 572 tax practitioners throughout Malaysia.

[2] Note that the survey questionnaire, comprising the Technology Readiness Index (TRI), is copyrighted by A. Parasuraman and Rockbridge Associates, Inc., 1999, and is adapted with written permission.

Non-response bias may occur when potential respondents included in the sample failed to respond. Fowler (1993) indicated that when the mail survey method was employed, one way to reduce non-response bias is to do rigorous follow-ups to increase response rate. Accordingly, three weeks after the first mailing, one follow-up letter was sent to survey respondents, and for those who had e-mail addresses, an e-mail was sent. Subsequently, three weeks after the first follow-up mailing, a second follow-up letter with another copy of questionnaire plus a stamped self-addressed envelope was sent by post. In total, 192 completed questionnaires were received; hence, the response rate was about 34% (192/572). However, at the time of study, there has been no prior empirical study on Malaysian tax practitioners that can be relied on as a reference point. Therefore, in order to test for the potential non-response bias, the mean score for the research variables was compared, i.e., between the first early respondents and the last 30 respondents, based on guidelines provided in Armstrong and Overton (1977). The t test results show no significant differences between the early and later respondents at 5% significant level, indicating that non-response bias is not a serious problem in this study.

DATA ANALYSIS AND DISCUSSION

The summated scale was used to compute the mean score of technology readiness dimension and usage intentions. The combination of scores on the four dimensions represents a person's overall technology readiness. The details of the survey results are presented next.

The Respondents' Profiles

The respondents' profiles are presented in Table 1 and Table 2. As Table 1 shows, the respondents' were located all over Malaysia. As expected, the majority of respondents were from Wilayah Persekutuan (34.8%) and Selangor Darul Ehsan (13.9%). These proportions reflect the reality in this country as these two states have the biggest number of registered audit firms in Malaysia (Lee, 2002).

TABLE 1 THE RESPONDENTS' PROFILE BY STATE

State	Percentage (%)
Wilayah Persekutuan (Kuala Lumpur only)	34.8
Selangor Darul Ehsan	13.9
Johor	11.8
Pulau Pinang	7.0
Sarawak	9.1
Perak	3.7
Sabah	8.6
Melaka	2.1
Kedah	2.1
Negeri Sembilan	2.1
Pahang	1.6
Terengganu	1.1
Kelantan	2.1

As Table 2 indicates, the respondents comprised tax proprietors/tax partners (80.2%), tax directors (5.3%), and tax managers (14.5%). A substantial majority of the respondents were Chinese (87.2%) and male (86%). The dominant proportion of

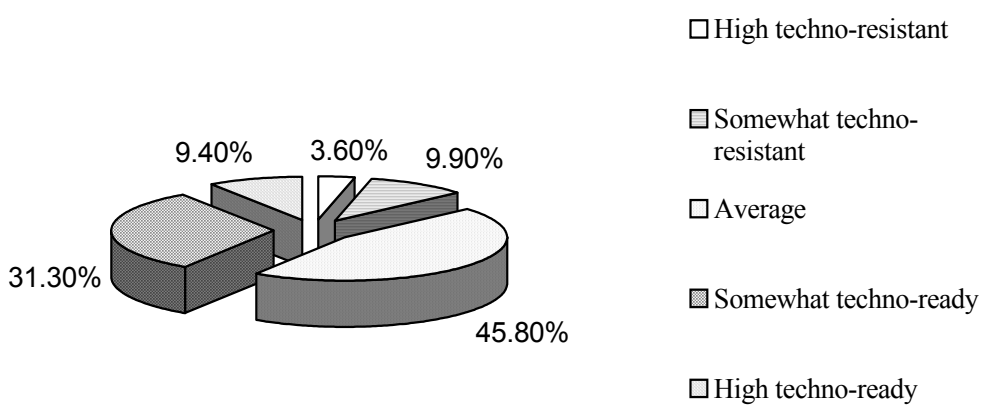
Chinese males in the respondents' group reflects the reality in Malaysia where Chinese males are the major players in accounting and tax practice. Approximately 22% of the respondents were aged below 35. The predominant education level was professional qualification and university degree. More than 91% of the respondents indicated that they were members of local professional bodies such as Malaysian Institute of Accountants (MIA), Malaysian Institute of Chartered Public Accountants (MICPA), and Malaysian Institute of Chartered Secretary and Administrators (MAICSA), and 48% were member of Malaysian Institute of Taxation (MIT). About 37% of the respondents were also members of foreign professional accounting bodies established in countries such as Australia, Canada, New Zealand and United Kingdom.

TABLE 2 THE RESPONDENTS' PROFILES

		Percentage (%)
Job Position	Proprietor/Tax Partner	80.2
	Tax Director	5.2
	Tax Manager	14.6
Gender	Male	85.9
	Female	14.1
Age	25-34 years old	21.9
	35-44 years old	34.9
	45-54 years old	32.8
	55 and above	10.4
Ethnicity	Chinese	86.5
	Indian	6.3
	Malay	5.2
	Others	2.0
Academic Background	Professional Qualifications	75.0
	Bachelors' degree	17.7
	Masters' degree	6.3
	Diploma	1.0
Professional Membership	MIA/MICPA/MAICSA	91.1
	MIT	47.8
	Foreign professional bodies	36.5
	None	1.6

Technology Readiness and Technology Readiness Dimensions

Based on the Technology Readiness Index, the survey results show that the respondents vary in their level of technology readiness. Figure 1 reports that about 3.6% were highly technology-resistant, 9.9% were somewhat techno-resistant, 45.8 % were in the average level, 31.3 % were somewhat techno-ready, and 9.4% were highly techno-ready.



Parasuraman and Colby (2001) found that those who have high level of technology readiness appear to be thought leaders with more technology savvy than those who have low technology readiness. In this vein, the survey results indicate that more than 40% of the respondents appear to be thought leaders. On top of this, the study of Rogers (1995) provided insights that thought leaders and early adopters should be identified and used as key change agents to facilitate the diffusion of the e-filing technology.

The mean score based on the data set for each technology readiness dimension and the *t*-statistics for equality of means for both gender and age groups is presented in Table 3. As Table 3 indicates, by and large, the respondents are highly optimistic towards new technologies with a mean score of 4.29 on the 5-point scale (significant at $p<0.001$), but they are less receptive to new technology with a mean innovativeness score of 2.86 on the 5-point scale. On the other hand, the discomfort dimension shows a mean score of 2.93 on a 5-point scale, thus indicating that the respondents experience lesser degrees of discomfort with new ICT. Furthermore, the results indicate that Malaysian tax practitioners as a group perceive a considerable level of technology anxiety, with a mean value of 3.6 on the 5-point scale on insecurity dimension (significant at $p<0.001$). In addition, *t*-statistics and the Mann-Whitney U test were used to test the influence of gender and age groups on the four technology readiness dimensions (see results in column 3 and 4 in Table 3 and Table 4 respectively).

TABLE 3: MEAN SCORES AND T-TEST FOR EQUALITY OF MEANS ACROSS GENDER AND AGE GROUPS

Technology Readiness Dimension	Items Mean (Std deviation)	Mean (Standard deviation)			Mean (Standard Deviation)		
		Male (N=165)	Female (N=27)	*t*-stats (*p*-value)	Aged below 35 (N=42)	Aged above 35 (N=150)	*t*-stats (*p*-value)
Optimism	4.2891* (0.5707)	4.2818 (0.5799)	4.3333 (0.5189)	-0.434 (0.665)	4.2619 (0.5548)	4.2967 (0.5767)	-0.348 (0.728)
Innovativeness	2.8576 (0.8865)	2.8545 (0.9004)	2.8765 (0.8120)	0.119 (0.905)	2.9444 (0.8739)	2.8333 (0.8914)	0.717 (0.474)
Discomfort	2.9323 (0.9396)	2.9727 (0.9423)	2.6852 (0.9003)	1.479 (0.141)	2.7381 (0.7092)	2.9867 (0.9898)	-1.521 (0.130)
Insecurity	3.5903* (0.9248)	3.5879 (0.9362)	3.6049 (0.8575)	-0.089 (0.929)	3.5873 (0.7644)	3.5911 (0.9656)	-0.024 (0.981)

All items were measured based on scale of 1 (Strongly disagree), 2 (Slightly disagree), 3 (Neutral), 4 (Slightly agree) and 5 (Strongly agree).
* Significant at p<0.001

TABLE 4: MANN-WHITNEY TEST FOR MEAN SCORE ON THE FOUR TR DIMENSION ACROSS GENDER AND AGE GROUPS

TR Dimension	Gender	N	Mean Rank	*Z* score (*p*-value)	Age	N	Mean Rank	*Z* score (*p*-value)
Optimism	Male	165	96.03	-0.36	Below 35	42	62.52	-0.330
	Female	27	99.35	(0.971)	Above 35	150	65.06	(0.741)
Innovativeness	Male	165	96.56	-0.294	Below 35	42	71.96	-1.214
	Female	27	96.13	(0.769)	Above 35	150	62.41	(0.225)
Discomfort	Male	165	98.82	-1.256	Below 35	42	58.57	0.978
	Female	27	82.35	(0.209)	Above 35	150	66.16	(0.328)
Insecurity	Male	165	96.42	-0.389	Below 35	42	58.05	-1.047
	Female	27	97.00	(0.697)	Above 35	150	66.31	(0.295)

The results as presented in Table 3 and Table 4 show that there is no significant difference in technology readiness dimensions across gender and age groups. These results contrast with the NTRS 2000 survey in several aspects. Notably the NTRS survey reported that males appeared to be more innovative than females; females experienced greater discomfort with new ICT as compared to males; older people tended to be less optimistic and less innovative about new ICT, and older people experienced more discomfort with new ICT as compared to younger people.

There are a few plausible explanations for the insignificant results between mean score for each TR dimensions, when variables like gender and age are compared. Firstly, the sample size for gender and age groups were imbalanced or not comparable. Notably, there were 165 male respondents and 27 female respondents. The dominant proportion of males in the respondent group reflects the reality in Malaysia that males are the major players in the accounting and tax practice. In addition, 42 respondents were below 35 years old and 150 respondents were above that age. This indicates that the majority of tax practitioners surveyed are highly experienced professionals.

Secondly, the samples were collected from a homogeneous group; i.e. tax practitioners who were highly educated professionals. As qualified tax professionals, regardless of gender and age groups, all of them are frequently exposed to new technologies at work and at home nowadays; as such, their perceptions towards new ICT may not vary greatly despite gender and age differences. Nevertheless, it is important to note that data analysis using the Mann-Whitney U test, as presented in Table 4, did show some variations in the four TR dimensions across gender and age groups, which warrant further attention and study.

Usage Intentions of the E-filing System

The respondents were asked to indicate their usage intentions of the e-filing system. The mean score observed was 5.7 on a 7-point scale (standard deviation=1.070), and the reliability test of the usage intention construct showed a Cronbach alpha of 0.90, indicating a very satisfactory measurement consistency (Nunnally, 1978). The result indicates that the majority of the respondents have high usage intentions of the e-filing system. However, the results may not be a precise measure and could be over reported, as it is a self-reported measure (Davis, 1993). At best, self-reported usage intention should serve as a relative indicator (Legris, Ingham, and Collerette, 2003). The following is an example of the difficulty with self reported measures (La Presse Montreal, Tuesday, 17 October 2000, cited in Legris et al., 2003, p.202):

"Observers in public washrooms in New Orleans, New York, Atlanta, Chicago and San Francisco noted that only 67% of the persons washed their hands after visiting the toilet cabinet. When 1,201 Americans, in a telephone survey, were asked if they washed their hands after going to the bathroom, 95% answered yes."

Furthermore, it is noted that some of the respondents specifically expressed that they would only use the e-filing system if the IRB could assure them that the electronic filing system were safe and secure, and if the usability and reliability of the e-filing system were fully tested and well documented.

Technology Readiness and Its Impact on Usage Intentions of the E-filing System

When we regressed usage intentions on the level of technology readiness (controlling for age and gender variables), the results of multiple regression showed that the level of technology readiness had a significant positive relationship on usage intention of the e-filing system (β= 0.39, t=5.83, $p<0.001$); and about 16% of the variation in usage intention of the e-filing system can be explained by the level of technology readiness ($r2 = 0.157$, $p<0.001$). This result appears to support the contention of Parasuraman and Colby (2001) that the level of technology correlates with intention to use the technology based products and services in varying degrees.

CONCLUSION

The survey findings of this study have implications for tax policy makers and tax practice management. One implication is that the survey results report that tax practitioners are optimistic about new technology. Nonetheless, they are also wary of the security of the Internet technology, an outcome also identified in the UK where concerns about Internet security inhibited tax practitioner filing return online (AccountingWeb, 2003). In a similar vein, 'perceived insecurity' could be the 'inhibitor' in promoting the e-filing system among tax practitioners. Thus, it is imperative for the tax authority to address the fundamental risks associated with online tax transactions before implementing the e-filing system nationwide.

The results also report that the respondents have a moderate level of 'discomfort' and 'innovativeness' with regard to emerging technologies. These results imply that the tax authority needs to ensure that the e-filing system is very user-friendly, easy to gain access to and easy to use in the context of tax compliance. Pragmatically, the tax authority needs to provide courteous technical support online or set up physical service counters at various premises to assist tax practitioners and intended tax users.

Another implication of the study is concerned with technology readiness and usage intentions (and ultimate usage) of the e-filing system. The survey results show that there is a significant positive correlation between technology readiness level and usage intentions of the e-filing system. This finding appears to indicate that technology readiness is a force behind the motivation to embrace the e-filing system among tax practitioners. The survey finding provides an insight that an understanding of technology readiness can be used as a business strategy, supporting Rogers (1995) suggestion that thought leaders can be identified and used as change agents to accelerate the diffusion of new technology. Hence, intuitively, it is suggested that the tax authority and tax firms need (i) to study the technology readiness of their staff; (ii) to identify the thought leaders among the staff; and (iii) to choose the thought leaders to lead the e-filing project and use them as the change agents to accelerate the diffusion of e-filing technology. For maximum effectiveness, employees in charge of tech-support should be high on technology readiness (Parasuraman and Colby, 2001).

Admittedly, this paper provides only a snapshot of the empirical evidence collected from one major segment of tax user groups, i.e., the tax practitioners or tax preparers. Hence, future research could be conducted on other potential tax user populations (such as tax officers and taxpayers) to gain further insights. A clearer understanding of the technology readiness of the intended users may provide useful insights pertaining to the types of systems that are likely to be most appropriate; the pace at which the systems should/could be implemented; and the types of support needed to assist tax users in voluntary compliance. Essentially, paying explicit attention to intended tax users' technology readiness may assist the tax authority in formulating business and marketing strategy to accelerate the adoption of e-filing technology.

REFERENCES

AccountingWeb. (2002), *Revenue to Miss 2005 E-deadline*, 18 February, available at <http://www.accountingweb.co.uk/cgi-bin/items.172161/448?>

AccountingWeb. (2003), *Security fears stop people tax filing online*, 4 February, available at <http://www.accountingweb.co.uk/cgi-bin/item.cgi? id=102352&d>

Agrawal, R., and Prasad, J. (1999), "Are Individual Differences Germane to the Acceptance of New Information Technologies?" *Decision Science,* 30(2):361-391.

Armstrong, J.S., and Overton, T.S. (1977), "Estimating Non-response Bias in Mail Surveys", *Journal of Marketing Research*, 14:396-402.

Burnett, D. C. (1998), "Testimony of Douglas C. Burnett", *The National Society of Public Accountants,* 43(2): 39-46.

Chau, P.Y.K., and Hu, P.J.H. (2001). "Information Technology Acceptance by Individual Professional: A Model Comparison Approach", *Decision Science*, 32(4): 699-719.

Dabholkar, P. A. (1994), "Incorporating Choice Into an Attitudinal Framework: Analysing Model of Mental Comparison Process", *Journal of Consumer Research*, 21: 100-118.

Davis, F. D. (1989), "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology", *MIS Quarterly,* 13(3): 319-318.

Davis, F. D. (1993), "User Acceptance of Information Technology: System characteristics, user perceptions and behavioural impacts", *International Journal of Man-Machine Studies,* 38: 475-487.

Davis, F.D., Bagozzi, R. P., and Warshaw, P. R. (1989), "User Acceptance of Computer Technology: A comparison of two theoretical models", *Management Science,* 35 (8): 982-1003.

Erard, B. (1993), "Taxation with representation: An analysis of the role of tax practitioners in tax compliance", *Journal of Public Economics,* 52:163-197.

ETAAC. (2002), *Electronic Tax Administration Advisory Committee: Annual Report to Congress*: Electronic Tax Administration Advisory Committee (ETAAC), USA.

Fishbein, M., and Ajzen, I. (1975), *Belief, Attitude, Intention and Behaviour: An introduction to theory and research*, Reading, MA: Addison Wesley.

Fowler, F.J. (1993), *Survey Research Methods*, Sage Publication.

FTA (2001), *State Electronic Tax Administration*. Federation of Tax Administrators, 1 October, available at <http://www.taxadmin.org/fta/edi/default>

Jackson, C. M., Chow, S., and Leith, R. A. (1997). "Toward an Understanding of the Behavioural Intention to Use an Information System", *Decision Sciences,* 28(2): 357-389.

Kahan, S. (1998), "Is Widespread E-filing Inevitable?" *The Practical Accountant,* 31(11): 22-29.

Kocakulah, M. C., and Grower, G. M. (2000), "Modernizing the Bureaucracy: Government information systems and technology", *The National Public Accountant,* 45(8): 24-25.

Lee, E. (2002), "Merge, Acquire and Prosper", *Akauntan Nasional (the Journal of Malaysian Institute of Accountants),* 15(6): 12-17.

Legris, P., Ingham, J., and Collerette, P. (2003), "Why Do People Use Information Technology? A Critical Review of the Technology Acceptance Model", *Information and Management,* 40: 191-204.

MIA. (2000), *Income Tax (Amendment Bill 2000)*, Malaysian Institute of Accountants (MIA), Circular No.20, November.

Mick, D. G., and Fournier, S. (1998), "Paradoxes of Technology: Consumer cognisance, emotions and coping strategies", *Journal of Consumer Research,* 25(2): 123-143.

Newsberry, K. J., Reckers, P. M. J., and Wyndelts, R. W. (1993), "An Examination of Tax Practitioner Decisions: The role of preparer sanction and framing effects associated with client condition", *Journal of Economic Psychology,* 14(2): 439-452.

NTRS. (2000), The 2000 National Technology Readiness Survey, 8 March at <http://www.technoreadymarketing.com>

Nunnally, J. C. (1978), *Psychometric Theory*, McGraw Hill, New York.

Parasuraman, A., and Rockbridge Associates Inc. (1999), *Technology Readiness Index: Instructions for use in a survey*.

Parasuraman, A. (2000), "Technology Readiness Index (TRI): A Multiple-Item Scale to Measure Readiness to Embrace New Technologies", *Journal of Service Research,* 2(4): 307-320.

Parasuraman, A., and Colby, C. L. (2001), *Techno-ready Marketing: How and why your customers adopt technology*, The Free Press, New York.

Rogers, E. M. (1995), *Diffusion of Innovations* (4th ed), The Free Press, New York.

SGATAR. (2001), "Creating a Paperless Environment in Tax Administration", Paper presented at the *31st Study Group on Asian Tax Administration and Research (SGATAR) Conference*, Kuala Lumpur, Malaysia.

Sheppard, B. H., Hartwick, J., and Warshaw, P. R. (1988), "The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research", *Journal of Consumer Research,* 15(3): 325-343.

Zmud, R. W. (1979), "Individual Difference and MIS Success: A review of the empirical literature", *Management Science,* 25(10): 966-979.