ARE YOU READY TO EMBRACE NEW TECHNOLOGY? ACCOUNTING PRACTITIONERS IN MALAYSIA

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ABSTRACT: *The objective of this study is to investigate the readiness (optimism, innovativeness, discomfort, insecurity and overall Technology Readiness Index) among accounting practitioners in Malaysia. Specifically, this study has identified accounting practitioners' intention to adopt any type of new technology. In addition, this study has examined the difference in technology readiness among gender, age, level of education and profession. This study employed a questionnaire survey to gather 518 accounting practitioners from a different profession in Malaysia (Kuala Lumpur, Putrajaya, Selangor). In relation to readiness, accounting practitioners also seem to be optimistic in knowing any new technology. With regard to the Technology Readiness Index (TRI) factors, there are no significant differences among accounting practitioners across gender. But there are significant differences with regards to the accounting practitioners' age, level of education and profession on optimism, insecurity and partial difference for overall readiness. Thus, demographic characteristics could also impact TRI factors. Further study should consider specific technology and profession to examine the real issue regarding the technology acceptance within an accounting perspective.*

Keywords: Technology readiness, accounting practitioners, Malaysia

1. INTRODUCTION

Malaysia is in the era to achieve Industry 4.0 which is referred to as production or manufacturing-based industries digitalization transformation that connected by technologies [1]. The term Industry 4.0 is referred to as the automation and data exchange in manufacturing technologies including cyber-physical systems, Internet of Things, big data and analytics, augmented reality, additive manufacturing, simulation, horizontal and vertical system integration, autonomous robots as well as cloud computing [2]. The Prime Minister has highlighted that the government will act as an enabler to reach the goals by the year 2025 through a five-thrust concept named FIRST — funding, infrastructure, regulatory frameworks, skill improvement programs and technology accessibility [3].

In order to achieve Industry 4.0, there is a need to improve the challenge made by industries in moving into this era. The challenges raised by MITI [1] also involved a lack of awareness of Industry 4.0 and benefits. Major challenges faced by industries in moving towards Industry 4.0 adoption include lack of awareness on the concept of Industry 4.0 and its benefits; lack of clear comprehensive policy and coordination on Industry 4.0 in Malaysia; infrastructure gaps particularly the digital infrastructure as well as ecosystem gaps; lack of targeted incentives to incentivize more companies to move to Industry 4.0; lack of skill sets and lack of right talent or human capital; and lack of standards resulting in difficulty of integrating different systems and reliability issue.

With this, the study has brought to investigate the readiness of accounting practitioners prior to moving to Industry 4.0 with the applied Technology Readiness Index (TRI 2.0). There is a need to apply the TRI 2.0 in this proposed study since the study is looking into the readiness of practitioners in Malaysia in embracing new technology in the accountancy profession. In the context of accounting, this index has been applied in evaluating the technology readiness of professional accounting students in Malaysia [4]. Furthermore, the index also has been applied in assessing technology readiness prior to computer experience and acceptance of the e-learning system [5]. A lot of studies have done used the TRI in a different specific technology, for example: in e-payment [6], ICT [7], education system [8] and computer-assisted audit techniques [9]. Thus, this TRI can be considered suits with this proposed study since the context of this study is to embrace and use of new technologies. Thus, the objective of this study is to identify accounting practitioners on the intention to adopt any type of new technology. Additionally, the objective of this study is to examine if there is any difference in technology readiness dimensions among gender, age, level of education and profession.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Based on [10], the technology readiness index (TRI) is related to people's propensity to embrace and use new technologies for accomplishing goals in home life and at work. Technology readiness consists of four factors which comprise of motivating factors (optimism and innovativeness) and inhibiting factors (discomfort and insecurity) that work together to form the user's view of technology [11]. The motivating factors are contributing to TR, whereas discomfort and insecurity ‘‘inhibitors,’’ detracting from it [10].

TRI 2.0 consists of 16 statements which 4 measure Optimism, 4 measure Innovativeness, 4 measure discomfort, and 4 measure insecurity. In addition, optimism and innovativeness are known as motivator factors while discomfort and 4 measure insecurity are known as inhibiting factors [9,10]. The TRI 2.0 has also applied in studies such as digital services [12], custom information systems [13] and the internet of things [14].

TRI is suitable to be used when the four factors are considered distinct in nature and individuals have a varying combination of these traits [1]. Suggested by [15] that also referred TRI as a condition or state in which the user is prepared to try new technology. Furthermore, TRI is suited to

the study because TRI is related to the technology in general [16] that reflects a set of beliefs about the technology. TRI has been used in many studies that used to test the individual's tendency to use new technologies [6]. TRI has differentiated between the drivers and inhibitors of technology adoption with the original TRI comprised of 36 items and have streamlined to 16 items [10]. TRI is suitable in this study due to that TRI takes into account not only technical skills but also people's feelings about technology [9].

Many studies also have been done to investigate whether demographic variables could affect acceptance [8]. Based on [10], there is a possibility of education and occupation that can cause changes in technology readiness. Furthermore, there is a possibility of technology readiness will change due to different ages and differences across a generation [10]. Age and gender have shown a significant effect on behavioural intentions, adoption, and usage behaviours [9,17-19]. Based on [20] have identified gender as a key variable in technology adoption and [8] has found a significant difference with regards to the gender on technology readiness. In the study done by [9,21,22] have shown the prior experience would affect users easily to use a new system in the organization. Different from [23] which identified gender and experience has no correlation to determine the decision to adopt cloud computing. With these mixed findings, this study has developed:

H1: There is a significant difference in technology readiness (optimism, innovativeness, discomfort, and insecurity) among gender.

H2: There is a significant difference (optimism, innovativeness, discomfort, and insecurity) on technology readiness among age.

H3: There is a significant difference (optimism, innovativeness, discomfort, and insecurity) on technology readiness among the level of education.

H4: There is a significant difference (optimism, innovativeness, discomfort, and insecurity) on technology readiness among the profession.

3. RESEARCH DESIGN AND METHODOLOGY

A questionnaire is developed for the purpose of this study. The respondents need to provide their view on optimism, innovativeness, discomfort, and insecurity. The instruments have developed based on TRI [10].

The data collection involves the distribution of questionnaires to accounting practitioners from the private and public sectors. They were approached personally by the researchers via telephone or email. Once the respondents provided their consent to participate in this study, a set of questionnaires with a self-addressed envelope provided was drop-off to the respondents. The respondents were requested to complete and return the completed questionnaire within a period of three months. In total, 700 questionnaires were returned. However, only 518 questionnaires were usable providing a successful response rate of 74 percent.

Most of the accounting practitioners come from the range of age of 22 until 30 years (64.29%) which can be considered young practitioners. More than 50% of accounting practitioners are female (73.17%), while practitioners are mostly own degrees (73.75%). Few of the practitioners have any certificate or professional certificate (11.78%) compared with a bachelor degree. Among all 518 accounting practitioners, respondents come from small and medium-sized audit firms (39.77%), listed companies (13.71%), non-listed companies (11.20%), big 4 audit firms (8.11%) and non-audit firm (4.83%). The other organization comes from the various type of organizations in which they are doing accounting related jobs (22.39%). Accounting practitioners involved are accountants (40.15%), external auditors (22.59) and tax practitioners (16.225), followed by the internal auditor, regulator, academician, corporate secretary, and another area. Then, MIA (36.10%) is a common membership that own by respondents, while 23.36% of respondents have ACCA and another certificate (29.34%). In relevant to this study that related to technology readiness, the scope of jobs among respondents is accounting (31.27%), auditing (27.41%), and taxation (20.27%), followed by company secretarial, financial accounting, management accounting, and management consultancy.

4. FINDINGS AND DISCUSSION

Table 1 presented the intention to investigate and adopt any recent technologies among accounting practitioners. The findings have shown 91% of respondents are really having the intention to gain more knowledge. Together with that, only 2.51% only see the technology should not be adopted and 11.39% are still unsure of the adoption of any technology in their organization. Surprisingly, 30% of respondents have already adopted and still in progress to adopt any technologies.

Table 1: Intention to investigate and Intention to adopt

Intention to further investigate and gain more knowledge	Frequency	Percentage
Yes, I will investigate	227	43.82
Yes, I will probably investigate	249	48.07
No, it is not relevant to me	42	8.11
The intention organization should adopt any recent technologies	**Frequency**	**Percentage**
Yes, should adopt	287	55.41
No, should not adopt	13	2.51
I do not know	59	11.39
Already adopting	67	12.93
Currently in the progress of adopting	92	17.76
Total	518	100

Table 2 presents the reliability test and the mean score. The reliability test is applied to determine the consistency and stability of the item [24]. The closer it is to 1, the higher the internal consistency reliability. As a rule of thumb, reliability less than 0.6 are considered poor, in the range of 0.7 is acceptable and over 0.8 are considered to be good. The findings show that the Cronbach's alpha for the four factors for the technology readiness was ranged from 0.783 to 0.856, which indicates that the higher internal consistency.

From the mean score, the survey found that accounting practitioners had higher optimism (4.015) towards embracing technology. Followed by insecurity (3.604) which agreed in their worry on the issue of insecurity of technology that they are prepared to be ready to adopt for their current job. Then, accounting practitioners had also agreed with the technology

will bring the innovation (3.095). But, they can be considered not really agreed with the discomfort (2.982) of any new technology that they intend to adopt in the future. Overall, accounting practitioners had shown moderately ready (3.424) to embrace any new technologies.

Table 2: A Test of Reliability and Descriptive Statistic

TRI	Cronbach's Alpha	Mean Score
Optimism	0.856	4.015
Innovativeness	0.855	3.095
Discomfort	0.837	2.982
Insecurity	0.783	3.604
Overall_TRI	n/a	3.424

**All variables (Optimism, Innovativeness, Discomfort, and Insecurity) were measured based on a scale of 1 (strongly disagree) to 5 (strongly agree).*

In these findings, an independent-samples t-test was conducted to compare the level of technology-readiness among accounting practitioners in relation to gender. Referred to Table 3, there is no significant difference in mean scores for female and male accounting practitioners for all four dimensions of optimism, innovativeness, discomfort, and insecurity together with the overall readiness. There was no significant difference with regard to all factors at $p > 0.05$ level. Thus, HI has been rejected. This finding is different from [8] which showed a significant difference between female and male for the three dimensions of optimism, innovativeness, and insecurity in using ICT. While in the e-learning system, [5] found there is a significant difference when male respondents were more innovative as compared to female respondents and there are no significant differences in optimism, discomfort, and insecurity between females and males. In the adoption of the audit system, [9] have shown optimism and innovativeness has no significant differences among gender.

Table 3: Independent-Samples t-test across Gender

TRI	Mean - Female (N = 379)	Mean - Male (N = 139)	p-value
Optimism	4.0020	4.0522	0.447
Innovativeness	3.0587	3.1942	0.091
Discomfort	2.9697	3.0162	0.542
Insecurity	3.6102	3.5881	0.762
Overall_TRI	3.4101	3.4627	0.253

** Significant at $p < 0.05$*

A one-way between-group analysis (ANOVA) was carried out to explore the difference of optimism, innovativeness, discomfort, and insecurity among different age, level of education and profession as referred in Table 4. In this study, only optimism (p=0.02) and discomfort (p=0.04) have shown significant differences among different ages. Thus, the H2 has partially accepted due to optimism and discomfort. With regard to optimism, the age of 41-50 years shows the higher mean score (4.33), followed by 31-40 years (4.07), 51-60 years (3.97) and the lowest score is observed from 22-30 years old (3.96). With regard to discomfort, the age between 31-40 years of accounting practitioners shows the lower mean score (2.67). The highest mean for teachers are observed in those from older age between 51–60 years of age (3.28). These findings consistent with the study done by [5] there are significant differences between the two age groups on both optimism and discomfort dimensions. These findings were consistent with [8] has found age is a significant difference in the discomfort, but they found significant on the innovativeness. Notably, these findings would be different from the readiness on the auditing system, in which respondents are found to be a statistically significant difference in the optimism, innovativeness, discomfort and insecurity scores for the three age groups [9].

The highest level of education among accounting practitioners has shown a significant difference between both optimism (p=0.021) and discomfort (p=0.035) only. Thus, H3 has partially accepted due to optimism and discomfort. There are six types of different education level which is certificate / professional certificate, diploma, degree, master's degree, doctor of philosophy and another level of education. The mean scores for TRI among six categories corresponding to 4.06, 3.74, 4.04, 4.05, 3.58 and 4.31. The mean score for accounting practitioners that own professional certificate, master's degree, degree, and other level have a different reaction on the optimism towards to embrace any type of technologies. While, regard to discomfort, the highest mean score is diploma owner (3.23), followed by another type level (3.06), degree (2.99), professional certificate (2.95), master degree (2.57) and doctor of philosophy (2.42). This current study is different from [8] that has a significant effect on discomfort among the level of education.

With regard to the profession, accounting practitioners have a significant difference in optimism (p=0.003) and discomfort (p=0.000) as well as the overall readiness (0.046). Among different profession on the optimism, the highest mean score was tax practitioner (4.134), internal auditor (4.103), another type of profession (4.097), accountant (4.012), corporate secretary (3.983), external auditor (3.917), regulator (3.750) and academician (2.250). From this optimism on the new technology, there are differences in the mean score which regulator and academician are the lowest scores. In regards to discomfort, the highest mean score is external auditor (3.26), internal auditor (3.25) and regulator (3.06) which indicates more to agree with the discomfort of new technology.

Among different ages, levels of education and profession, the overall technology readiness has a significant difference among professions which the range of mean score from 2.531 to 3.537. From the overall readiness, the findings can be considered ready with the adoption of any technology with the internal auditors (3.537), external auditors (3.493), regulators (3.484), tax practitioners (3.406), accountants (3.398), corporate secretary (3.367), another type of profession (3.367) and academician (2.531). In other words, the overall readiness might difference due to a different use of technology in accomplishing their works as accounting practitioners. Due to the findings, the H4 has partially accepted the significant difference in optimism, discomfort and overall readiness.

Table 4: A Tests of ANOVA between Technology Readiness and Age, Level of Education and Profession

	Age	Level of Education	Profession
TRI		p-value	
Optimism	0.02*	0.021*	.003*
Innovativeness	0.76	0.760	.062
Discomfort	0.04*	0.035*	.000*
Insecurity	0.82	0.822	.870
Overall_TRI	0.93	0.933	.046*

** Significant at p < 0.05*

5. CONCLUSIONS

This study aimed to investigate the technology readiness by using TRI, a scale that consists of four dimensions of optimism, innovativeness, discomfort, and insecurity. This current study has utilized the TRI 2.0 which consists of 16 items by [10] in order to investigate accounting practitioners to embrace any new technologies that were raised for the accounting area. These items are sufficient to be used in this study due to higher internal consistency that indicates this item could represent how accounting practitioners able to measure the readiness towards to embrace any type of technologies.

Prior to investigating the readiness among accounting practitioners, this study has identified the intention to adopt. A good side of these findings, it shows most of the accounting practitioners indicate an intention to further learning and adopt in the future. Furthermore, the findings are not as great as expected to have significant differences in each factor of technology readiness among gender, age, level education, and profession. In this study, there is proof that it is no difference in any factors between females and males on embracing any new technology. Fortunately, a different view on optimism and discomfort has found among age, level of education and profession. In relation to accounting practitioners' view on the technology and their attitude, there respondents with 41-50 years and 31 -40 years would have a more positive view and believed in how technology could increase job efficiency and enhancing people's lives at work. Together with age, different levels of education would also provide different attitudes on how they perceived the technology could benefit them in the future. In addition, different professions among accounting practitioners would also bring to different courage is using any technology with positive attitudes toward technology.

Together with readiness, the view on discomfort also shown differences among age, level of education and profession. Their lack of confidence may be different among age in using any new technology, while with different education they might feel less confident because there are differences in mean score on their confidence. In terms of a different profession, the confidence would be different when the respondents are working as external auditors, internal auditor or another type of profession. Finally, this study has found the readiness would be different among accounting practitioners.

Overall, the mixed findings from this study would be in line with the findings that found from various research that investigate the technology readiness such as [5,8,9]. In conclusion, this current study has indicated its suit with the TRI 2.0 [10] to explore the readiness among different demographic characteristics.

This current study will provide implications when TRI 2.0 is suitable to apply in different cultures and technology. Furthermore, the findings from the demographic characteristic are suitable for understanding individuals from developing countries especially Malaysia. Notably, the knowledge and interest in such technology, for example, social media, mobile application, internet of things and payment systems would be widespread among accounting practitioners. However, there a lot of technologies that seem to be low in knowledge among practitioners. This indicates that accounting practitioners are required to increase basic knowledge and skills in order to embed in their working environment.

This study was carried with limitations when this study could be considered an exploratory study among accounting practitioners on the general towards any new technology. This study has not been carried towards any specific technology on the technology readiness index (TRI 2.0). In the future, this study will continue with the integration of TRI 2.0 with the technology acceptance model (TAM) to test the acceptance of any four main preferred technology together with the technical competency.

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