
Technology Readiness Among Future Accountants Towards Digitalization of Accounting Profession

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Abstract: As the digital world evolves, accounting professionals must embrace the digital shift to remain relevant. Future accountants must be equipped with the most up-to-date technological knowledge. Thus, this study investigates the link between optimism, innovativeness, discomfort, and insecurity about technology with technology readiness for the digitalization of the accounting profession among future accountants. This study employs a non-probability purposive sampling approach with future accountants as the research unit. Online surveys are used to gather data for this study, delivered to interns from the top six public universities in Malaysia for accounting and finance. The findings of this study show a moderate technology readiness level among the respondents. Despite respondents being optimistic about technology, they indicate feelings of discomfort towards technology. As a result, adequate focus must be given to establishing accounting expert qualifications alongside professional degrees. Their tertiary education should include more exposure to and practice technology readiness.

Keywords: accounting profession, digitalization, future accountants, technology readiness.

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INTRODUCTION

Today's businesses are undergoing a considerable transition due to the technological, automation, and digitalization of their manufacturing processes and operations. As such, employees' knowledge and competencies are critical factors in a company's ability to meet such issues in the most competitive manner (Stancheva-Todorova, 2019). Changes in business technology influence the Information Communication Technology (ICT) skills that aspirant and experienced accountants need to fulfill their positions' demands. ICT is often viewed as



a powerful and pervasive engine of economic and cultural transformation (Jones et al., 2017). Combined with the increasing value of behavioral skills, the changes present the accounting profession with challenges. Digital technology affects a company's strategic and competitive goals and impacts consumer trends, competitive benefits, and market strategy. In addition, digital technology has a major impact on accounting information and control systems (Mancini et al., 2017). Careers are constantly evolving with technological advances, globalization, and intensified competition. The accounting industry is the most relevant profession in which technological advances and globalization will affect the most. Many automated systems that did not exist ten years ago are now actively used in the accounting profession with technological advancement (Tekbas, 2018). The findings by Frey & Osborne (2017) showed 702 work titles that are at risk of being automated, hence the accounting profession is highly likely to be automated and digitized in the near future. Nonetheless, because getting information about a company's financial records is still crucial, highly experienced and expert public accountants are required to carry out their duties in the accounting profession responsibly (Hermawan et al., 2021).

Additionally, motivated by changes in response to the growing digitalization of business, we believe it will impact the way accountants perform their jobs. They must be knowledgeable of new skills, especially in engineering, which will assist the new types of accounting professionals (Gulin et al., 2019). It is the way accountants are increasingly conducting business. Accountants put themselves at risk as financial professionals at the core of organizations if they fail to comprehend how technology and the digital journey are altering the workplace (ACCA, 2020). According to World Bank research, Malaysian enterprises are less likely to invest in upskilling and innovation than companies in countries that have successfully transitioned to high-income status (Yeap, 2021). Only 18.5% of businesses provide training to their employees, compared to an average of 40% in nations that Malaysia should use as a benchmark. Malaysia also needs to allocate incentives for researchers to cooperate with the private sector and perform industry-relevant research to accelerate the commercialization of Research and Development (R&D) outputs and the technology transfer process. The digital journey is important since it is a key component of corporate success and growth of the new accounting profession. Therefore, studying future accountants' readiness for accounting digitalization in Malaysia is fascinating.

Based on the study by Parasuraman & Colby (2015), technology readiness is required to infer technology availability, emphasizing specific concerns, such as demographic factors, age, education level, and employment, to better appreciate its importance. In this regard, this study aims to examine the relationship between knowledge about technology and technology readiness for the digitalization of the accounting profession among future accountants. This research is timely to evaluate future accountants' technology readiness towards digitalization of the accounting profession in preparing for their future career as accountants. It is vital to determine the level of technological readiness of future accountants to exercise their professional practices in the new industrial revolution era.

The technology that profoundly affects business processes includes mobile apps, cloud computing, big data and bitcoin, artificial intelligence (AI) technology, and drone technology. These technical advancements will have a significant impact on the accounting profession since they will enhance the accountant's digital competencies and remain competitive in the markets (Birt et al., 2019). Today, management is more creative and business-oriented than its ancestors, and technologies play a major role in shifting this generation. Technology use simplifies accounting tasks making it more convenient, especially mobile technology; hence accounting practice becomes easier, faster, and more accurate. Furthermore, accountants could access their work almost anywhere; thus, corporate reporting is more efficient.

Therefore, professional accountants must anticipate and accommodate emerging differences in business practices, roles, responsibilities, and regulations. They also need to develop the necessary technical

knowledge, skills, and ethics and demonstrate interpersonal behaviors and qualities, with their roles' dramatic development over the years (Abd Razak et al., 2021). The accounting profession is expected to embrace a new era of digitalization that will revolutionize traditional accounting procedures, from record-keeping to reporting needs, from big data and data analytics to the internet of things and blockchain. The professionals' roles will change and grow more valuable as they move up the food chain into new areas and opportunities.

Financial and accounting professionals need to understand the importance of technology readiness in the workplace; the first important step is to deem its progression instead of denying it. Was the work of the respondents relevant to digital skills? About 92% admitted it was necessary or highly important to understand the use of their customers' data and the digital world and described themselves as operating with external audits or related positions (Appelbaum et al., 2017). Meanwhile, almost 92% of businesses have a similar view of the effect of their understanding on their company. As a profession, the role of the accounting and finance experts is relevant to digital skills. The challenge is to utterly understand what technology readiness consists of in the changing business model in the transformed company.

Technology readiness is a composite of psychological motivators and inhibitors that collectively defines an individual's tendency to employ new technology (Parasuraman, 2000). The construct is multifaceted, comprising four dimensions: optimism is a positive view of technology and a belief that it offers people increased control, flexibility, and efficiency in their lives; innovativeness is a tendency to be a technology pioneer and thought leader; discomfort is a perceived lack of control over technology and a feeling of being overwhelmed by it; insecurity distrusts technology, stemming from skepticism about its ability to work properly and to be concerned about its potentially harmful consequences (Parasuraman & Colby, 2015). The first two dimensions of optimism and innovativeness are considered "motivators," whereas discomfort and insecurity are considered "inhibitors" factors. Additionally, the four dimensions are generally distinct, which means that an individual might exhibit a variety of technology-related qualities that can occasionally result in a paradoxical condition characterized by strong motivations balanced by strong inhibitions.

Specifically, optimism is defined as "a positive view of technology and a belief that it (technology) offers people increased control, flexibility, and efficiency in their lives" (Parasuraman & Colby, 2001). It typically depicts positive or favorable attitudes and feelings about technology (Sell & Walden, 2021). Previous research has identified optimism as a motivator for new technology adoption. Consumers appear to be positive about new technology that allows them to personalize items to their wants (Parasuraman & Colby, 2015). It generally portrays positive feelings about technology. Utilizing the Theory of Technology Acceptance Model (TAM), Rafdinal & Senalajari (2021) found that optimism positively affects perceived usefulness and ease of use. Furthermore, among the Technology Readiness Index (TRI) components, optimism has a higher level of relevance than others. Thus, variables associated with optimism must be addressed to enhance attitude, given their substantial relevance and average performance. In short, optimism leads to trust in technology, which would increase efficiency in life.

Innovativeness is the tendency to be a technological-pioneer-thought leadership (Parasuraman, 2000). This dimension typically assesses how much people believe they are at the forefront of technological adoption. It denotes the degree to which a person becomes a pioneer in experimenting with new technology-based goods or services, as well as an opinion leader on technology-related topics (Lin & Chang, 2011). Individuals with a high score on this dimension are believed to be more inclined to acquire and employ high-tech products or services, and they have favourable attitudes towards technology (Parasuraman, 2000; Parasuraman & Colby, 2015). Rafdinal & Senalajari (2021) found that innovativeness positively affects perceived usefulness and ease of

use, similar to optimism. This strengthens the view that optimism and innovativeness are drivers of technology readiness. High scores on these dimensions increase the overall technology readiness (Sell & Walden, 2021).

Insecurity is a negative concept or inhibitor defined as people's distrust of technology and their doubts about its ability to function properly (Parasuraman & Colby, 2015, 2001; Parasuraman, 2000). This dimension focuses on the concerns people may have in the face of technology-based transactions. Insecurity distrusts technology, which stems from skepticism about its ability to function appropriately and worries about its possibility of bad effects creates fear and mistrust towards technology that may affect work. Insecurity could lead to users feeling cautious about using technology and become a negative driver of technology adoption (Lin & Chang, 2011). Insecurity also reflects mistrust, hesitation, and increased user concerns about the risk consequences of new technology (Parasuraman & Colby, 2015). The insecurity factor significantly affected the continuing intention to use but positively affected the continuance intention to use in the inverted perspective. This insight could be seen as a phenomenon of willingness to adopt and use new technologies in their personal and professional lives. Nevertheless, general distrust and skepticism towards technologies do not prevent users from using new technologies in their personal and professional lives (Priananda et al., 2020).

Discomfort is defined as "a perceived lack of control over technology and a feeling of being overwhelmed by it" (Parasuraman & Colby, 2001), which leads to a lack of confidence in using the technology. This dimension generally measures the fear and concerns people experience when confronted with technology. Based on previous studies, high levels of discomfort could lead to negative behavior towards technology (Parasuraman & Colby, 2015; Humbani & Wiese, 2017). While it shows some degree of similarity with discomfort, there is a fundamental difference between this facet and discomfort (Priananda et al., 2020). Individuals with high discomfort traits would consider technology as more complex. They believe that technology is too complicated and is not designed to be used by normal people (Massey et al., 2013). They find technology use overwhelming and uncontrollable, leading to their low perception of technology regardless of the actual outcome (Blut & Wang, 2020). Individuals with discomfort traits have been described as anxious and uncomfortable when using technology because they think they are being controlled by technology (Ali et al., 2019).

METHODS

This study used a non-probability purposive sampling technique, utilizing future accountants as the research unit. Future accountants are current accounting students who will soon enter the accounting profession (Suhaiza, 2014). The study sampled final-year accounting students enrolled in internship programs at Malaysia's top six public institutions for accounting and finance. The online questionnaires were distributed via personal contact with the Internship Coordinator for the respective six public universities, having shared the link to online questionnaires to their interns. At a minimum, three times follow-ups were done by the researchers to ensure the highest possible respondents took part in the survey. The duration for data collection was for about two months. In total, 187 out of 546 (34.25%) respondents returned the questionnaires. The data were analyzed using SPSS.

Specifically, a search engine via <https://www.easyuni.my> resulted in eight top accounting and finance programs in Malaysia's public and private universities. However, this study eliminated two private universities to avoid contradiction in data usage to compare public and private colleges.

The items tested in the questionnaires included sixteen items (Table 1) in determining the technology readiness level of the respondents based on Technology Readiness Index (TRI), adopted with permission from Parasuraman & Rockbridge Associates, Inc. (1999). Furthermore, the respondents' opinions on the digitalization

of the accounting profession were measured based on “opportunities for future accountants (5 items)” and “risk for future accountants (5 items)” (Table 1). These items were adapted from Voss & Riede (2018) and rated on a five-point Likert scale of “1 for Strongly disagree” to “5 for Strongly agree”.

Table 1 Measurement Items for Technology Readiness and Digitalization of The Accounting

Sub-section	No. of items	Sources
Optimism	4	Parasuraman & Rockbridge Associates, Inc, 2014
Innovativeness	4	Parasuraman & Rockbridge Associates, Inc, 2014
Discomfort	4	Parasuraman & Rockbridge Associates, Inc, 2014
Insecurity	4	Parasuraman & Rockbridge Associates, Inc, 2014
Opportunities for future accountants	5	Voss & Riede, 2018
Risk for future accountants	5	Voss & Riede, 2018

RESULTS AND DISCUSSION

The respondents were 38 (20.3%) male and 149 (79.7%) female from the selected six public universities. The majority of the interns (157 or 84%) are between the ages of 20 and 24, with internships lasting between three and six months. Most interns were Malay at 148 (or 79.1%), followed by the Chinese interns. All respondents enrolled in a Bachelor of Accountancy program at their respective universities.

In the most prevalent business sector, the interns attached to audit companies (116 or 62%), followed by private firms (36 or 19.3%). The remaining employers included federal government agencies, state government agencies, financial organizations, and others, such as tax businesses and essential services firms.

In terms of location, most employers were in Selangor (48 or 25.7%) and Kuala Lumpur (43% or 23%). Johor accounted for 21% (11.2%), while other states had low numbers, fewer than 10% in some cases. The demographic data emphasized the respondents' credibility as survey participants for this research.

Cronbach's Alpha is used to assess measurement reliability; values more than 0.7 are considered acceptable but values greater than 0.8 are desired (Pallant, 2010). Cronbach's Alpha results for all sub-constructs and constructs of the study (Table 2), indicated that all items are reliable for further analysis.

Table 2 Reliability Statistics

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Optimism	.884	.888	4
Innovativeness	.917	.918	4
Discomfort	.857	.858	4
Insecurity	.852	.854	4
Technology readiness	.889	.885	16
Opportunities	.734	.748	5
Risks	.848	.848	5
Digitalization of Accounting Profession	.797	.804	10

This study employed Landell's (1997) as quoted in Abdullah et al. (2017) as well as Hairuzila & Abdullah (2018). The level of mean score is used to analyze respondents' understanding of technology, technological readiness, and digitalization of the accounting profession. The scores are represented by mean scores of 1.00–2.33 (Low), 2.34–3.67 (Medium), and 3.68–5.00 (High). Table 3 summarizes the mean score on technology readiness and digitalization of the accounting profession. As discussed earlier, technology readiness consists of four dimensions: optimism, innovativeness, discomfort, and insecurity.

Table 3 Mean Score

	N	Minimum	Maximum	Mean	S.D.
Optimism	187	1.50	5.00	4.1564	.59450
Innovativeness	187	1.00	5.00	3.3516	.84304
Discomfort	187	1.00	5.00	3.2406	.84695
Insecurity	187	1.00	5.00	3.5241	.81737
Technology Readiness	187	1.94	5.00	3.5682	.56088
Opportunities for Future Accountants	187	2.40	5.00	3.8235	.57425
Risks for Future Accountants	187	1.00	5.00	3.8353	.65339
Digitalization of Accounting Profession	187	1.70	5.00	3.8294	.49213

Note: N = the population size; Mean = Average of a data set; S.D. = Standard Deviation

Technology readiness is a set of technology-related attitudes that collectively determine the propensity of customer, employee, or executive to accept new technologies both at work and in their leisure time to attain their goals (www.igi.global). Referring to Table 3, the respondents' average score of 3.57 suggests a moderate technology readiness level. The result is almost similar to Sell & Walden (2021), in which the overall technology readiness index means score is above the scale's midpoint of 3.0. It reflects the willingness to adopt and use new technology in personal and professional lives (Parasuraman, 2000). Thus, the average score suggests respondents' moderate willingness to adopt and use new technologies in their personal and professional lives. Optimism has the highest mean score of 4.16, while discomfort has the lowest mean score of 3.24.

The findings are somehow in line with the findings of the Sudaryanto et al. (2023) survey, which revealed that accounting students are largely optimistic and believe in the innovativeness of technology readiness (i.e., artificial intelligence) but they also have a high level of discomfort and insecurity. Ariani et al. (2018) explained that the optimism factor is a positive perception of understanding knowledge with the certainty that it is easy to master, flexible, and efficient. The discomfort factor has the lowest effect for continuance intention to adopt a technology. People with a high level of discomfort would regard technology as more complicated. They believe that technology is extremely complicated and not intended for everyday use (Massey et al., 2013). Meanwhile, the respondents also reflected medium mean scores for innovativeness and insecurity, with 3.35 and 3.52, respectively. The higher score on the innovativeness measures indicates the respondents' higher technological readiness (Sell & Walden, 2021). In the meantime, Blut & Wang (2020) posit that insecurity is negatively related to value, with unconvinced individuals anticipating danger rather than benefit when it comes to using technology, resulting in developing a lesser value perspective on technology's utilization. In this study, the respondents were convinced of technology's benefits.

Additionally, a high overall mean score (mean = 3.83) was reflected for the digitalization of the accounting profession, with respondents expressing strong opinions on both future accountants' opportunities (mean = 3.82) and future accountants' risk (mean = 3.84). These findings suggested that the digitalization of the accounting profession presents future accountants with both high opportunity and significant risk. Accountants have a significant chance to improve their level of expertise, especially in terms of digitalization skills and knowledge, giving the impression that accountants' jobs might become more difficult in the future (Moll & Yigitbasioglu, 2019). More mundane and repetitive functions will be automated due to digitalization, allowing accountants to focus on opportunities to bring value to organizations and their users (Richins et al., 2017).

A multiple regression analysis was used to determine correlations between the independent variables (optimism, innovativeness, discomfort, and insecurity) and dependent variables (digitalization of the accounting profession). Related assumptions were verified, and statistical data showed that none of them was violated.

Normality is examined by looking at the skewness and kurtosis values. Skewness measures the variable's symmetrical distribution, while kurtosis measures the peak of the distribution (Hair et al., 2014). In determining normality, a threshold value of no more than three for skewness and a kurtosis value of no more than ten are acceptable (Chou & Bentler, 1995; Kline, 1998; Diana, 2010).

Table 4 Normality Test

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Optimism	-.585	.178	1.871	.354
Innovativeness	-.055	.178	-.206	.354
Discomfort	.069	.178	-.292	.354
Insecurity	-.498	.178	.169	.354
Technology readiness	.333	.178	.273	.354
Opportunities for Future Accountants	.144	.178	-.247	.354
Risks for Future Accountants	-.495	.178	1.295	.354
Digitalization of Accounting Profession	-.256	.178	1.094	.354

Table 5 Multicollinearity

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Optimism	.849	1.178
Innovativeness	.580	1.725
Discomfort	.429	2.331
Insecurity	.583	1.715

Dependent Variable: Digitalization of the Accounting Profession

Results in Table 4 show the skewness values and the kurtosis value of not more than three and not more than ten, respectively. Thus, the data has been normally distributed.

The results for multicollinearity are shown in Table 5, indicating no multicollinearity (Pallant, 2010) with the tolerance value of 0.829 (>0.10) and VIF value of 1.206 (<10).

The results summarized in Table 6 show that the model for the relationship between the independent variables (Insecurity, Optimism, Innovativeness, Discomfort) and the dependent variable (Digitalization of Accounting Profession) is significant.

Table 6 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.137	4	2.784	14.943	.000b
	Residual	33.911	182	.186		
	Total	45.048	186			

a. Dependent Variable: Digitalization of accounting profession

b. Predictors: (Constant), Insecurity, Optimism, Innovativeness, Discomfort

Further examination of the R Square value (Table 7) shows that the model predictors explain 24.7% of the variance in the digitalization of the accounting profession. In other words, the remaining 75.3% is explained by other factors, which are not within the scope of this study.

Table 7 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.497a	.247	.231	.43165

a. Predictors: (Constant), Insecurity, Optimism, Innovativeness, Discomfort

b. Dependent Variable: Digitalization of the Accounting Profession

Table 8 summarizes the analysis performed to identify the significant and most contributing predictor of the four dimensions.

Table 8 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	1.865	.263			7.088	.000
	Optimism	.382	.058	.461		6.606	.000
	Innovativeness	-.020	.049	-.035		-.412	.681
	Discomfort	.060	.057	.104		1.060	.291
	Insecurity	.071	.051	.118		1.401	.163

a. Dependent Variable: Digitalization of the Accounting Profession

Based on Table 8, the largest beta value of 0.461 (46.1%) is for optimism and the only significant predictor (Sig. value < .05) of the model. This implies that optimism has a significant positive relationship with the digitalization of the accounting profession. The result is consistent with previous studies (Rafdinal & Senalasar, 2021; Priandana et al., 2020). The result also added evidence to Parasuraman's (2000) view that optimism describes individuals' belief that technology has benefits, and in this case, towards digitalization of the accounting profession. Generally, it also reflects future accountants' confidence in using technology and increasing digital competencies in the accounting profession.

Of the four components of TRI, Optimism shows a significant positive relationship with the digitalization of the accounting profession. Meanwhile, the other three predictors (innovativeness, insecurity, and discomfort) are insignificant in explaining the digitalization of the accounting profession. In contrast, although innovativeness, insecurity and discomfort contributed to the digitalization of the accounting profession to a certain extent, there is no statistically significant relationship between these variables.

In short, the three predictors (innovativeness, insecurity, and discomfort) are insignificant in explaining the digitalization of the accounting profession. One probable reason is that innovative individuals are more critical of technology because they are aware of the most recent advances and possibilities. People who assume that using technology will make them feel insecure often feel anxious and doubt the usefulness of the technology (Pham et al., 2020). When utilizing technology, people with discomfort qualities are said to feel uneasy and apprehensive because they believe technology is controlling them (Ali et al., 2019). People who assume that using technology will make them feel insecure often feel anxious and doubt the usefulness of the technology (Pham et al., 2020).

CONCLUSION

The accounting sector is continuously aiming to build highly competent professional accountants. They need to be technology-ready, especially for accounting digitalization, because they would be treated as the information technology manager, designer, and evaluator. The development of information technologies has improved access to financial and non-financial data. Most research shows how technology changes accounting life, such as management accounting that needs to undergo fundamental changes. Thus, this creates urgency for competent accounting graduates to maintain accounting professionalism. The findings of this study show a moderate technology readiness level among the respondents, suggesting their moderate willingness to adopt and use new technologies in their personal and professional lives. Although the respondents are optimistic about technology, they also indicate feeling discomfort towards technology. In addition, the respondents expressed strong opinions on both opportunity and risk confronting future accountants with the digitalization of the accounting profession. Overall, the finding shows a significant relationship between optimism about technology and technology readiness for the digitalization of the accounting profession among future accountants. Explicitly, it implies the more well-prepared accountants are to use technology, the greater their ability to adapt to technological advancement in the industry. Therefore, attention must be given to developing accounting experts in digital accounting. Exposure to digital literacy should be enhanced at their tertiary education. However, this study is limited to only six public universities, and the results may not be generalized to represent all future accountants' beliefs. Thus, future research may expand the sample selection by including private and other universities.

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