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Information Technology Competencies for Malaysian Accountants – An Academic’s Perspective

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Abstract

An increase in the pace of technological change has revolutionised the way accountants perform their jobs. In response to this challenge, the identification of a new comprehensive set of information technology competencies combined with information technology skills and other skills (namely, soft skills) are necessary. This study uses mixed methods to identify which information technology skills and competencies are required for accountants from the perspective of academics in Malaysia. Findings indicate that spreadsheets, word processing and accounting software were ranked as much-needed skills to be acquired by accountants while communication skills were ranked as the most required skills, and delegation skills as the least required. Although academics have an important role to determine accountants’ information technology skills and competencies, they are still unfamiliar with the exact soft skills that should be blended in utilising information technology.

Keywords: Information technology, skills, competencies, academics, Malaysia

INTRODUCTION

Information Technologies (IT) have a profound impact on accounting profession. It has change the way accounting is conducted, consequently the accountants require high level of IT skills and competencies. These IT skills and competencies, however, do not just relate to operating IT, but it is equally important for professional accountants to have complementary organisation, conceptual and people skills. In addressing the issue, responsibilities are often placed on the Malaysian Institute of Accountants (MIA) and Malaysian higher academic institutions. These two sources/institutions are actively involved with the development of IT skills and competencies for accountants in Malaysia. MIA is one of the professional accountancy bodies that have a significant role in the contribution of guidelines for accounting fresh graduates and accountants in order to improve their performance and professionalism. This professional institute is under the direction of the Ministry of Finance and reports directly to the Accountant General’s Office. Most academics and practitioners have referred to MIA in the design of accounting curriculum and the improvement of skills and competencies. MIA also plays a part in developing and advancing the global accounting profession through its involvement with organisations such as the Institute Federation Association of Accountants (IFAC). Unfortunately, this institute has not created its own guidelines in providing accountants’ training and skills requirements for IT utilisation; rather, it used IFAC’s. Academic institutions of higher learning have played a significant role in delivering educational and training programs, including IT skills, for accounting students. To date, there is very limited integration of elements of IT and soft skills in accounting education (Ismail and Abidin 2009). Most Malaysian universities have taught a very common tool or software; such as, word processing and spreadsheets (Lai and Nawawi 2010). Besides this, there are very limited advanced technology software and tools, i.e. electronic resource planning (ERP) and electronic data interchange (EDI). In addition, soft skills, i.e. communication skills and analytical thinking are trying to be blended into the accounting curriculum as a preparation for accounting fresh graduates to meet the requirements of either their job or their employers.

From the two sources discussed, there are no common grounds between them. Each of them is looking at a generic skill set rather than at a specific set. This assumption is also reflected in studies in IT skills and competencies. Most of the previous studies are more focused on skills using software and hardware rather than referring to the combination of IT skills and soft skills. For example, Ismail and Abidin’s study found a relatively low level use of technology by participants, especially in advanced technologies such as EDI, CASE tools, agent technologies, database design and application service provider, even though these technologies are

considered important (2009). These findings also supported by Mgaya and Kitindi (2008) where technology or software becoming more sophisticated and complicated, thus, accountants will face new challenges and risks. In addition, a study by Lai and Nawawi (2010) reveals that the usages of e-tax applications are still not widespread in tax practice among accounting practitioners. Most of the findings from literature indicate that only a few technologies such as word-processing skills, electronic spreadsheets, email, electronic search and retrieval and small accounting software packages are considered as being adequate by the participants in attempts to identify critical IT skills among them (Greenstein and Porch 2004; Mgaya and Kitindi 2008; Ismail and Abidin 2009). Apparently, IT skills per se are not sufficient in helping accountants to benefit from the whole range of IT hardware and software. Thus, the identification of a new comprehensive set of IT competencies, together with a combination of IT skills and other soft skills is necessary, in order to produce accountants who are able to maximise IT utilisation in accounting and business processes.

The Malaysian scenario shows that the demand for accounting professionals arose through the need to achieve skills in IT in order to fulfil clients' demands for improved accounting services. However, the competencies acquired by accountants are still below the minimum level drawn by the professional accounting bodies such as the IFAC and the AICPA (IFAC 2003; Chang and Hwang 2003; Jones and Abraham 2007; Senik and Broad 2011). Thus, appropriate action by academics and practitioners need to be established since these competencies not only have to serve the needs of investors and creditors, but also to meet the information needs of many other users of financial and non-financial information (IFAC 200; Barac 2009). This issue has inspired researchers to explore the set of IT skills, competencies or expertise required throughout the life cycle of an accountant's career to perform the necessary tasks efficiently. Therefore, the main objective of this study is to identify the optimum skill set of IT competencies required for accountants from the point of view of academics from Malaysian higher learning institutions. It will, however, be interesting to study the competencies developed in the use of IT in the arena of different cultural settings.

This paper is structured as follows: the first section describes a brief review of changing roles of accountants and IT competencies for accountants based on relevant literature. The second section is the main focal point in presenting findings of this study. Finally the paper draws conclusions from this study.

LITERATURE REVIEW

The Changing Roles of Accountants

The issues of the changing roles of accountants have been widespread by many researchers in many countries such as Australia, United Kingdom, United States and Germany (Dillon and Kruck 2004; Grenstein-Prosch and McKee 2004; Mohamad and Lashine 2003; Jones and Abraham 2007; Hancock et al. 2009) and other developing countries (Chang and Hwang 2003; Mgaya and Kitindi 2008; Ismail and Abidin 2009; Lai and Nawawi 2010). IT elements have been appearing to be crucial in triggering changes of accountants' roles. For example,

“... Technology has become an inevitable part of today's accounting practice, and therefore selecting equipment and tools, applying technology to certain tasks, and maintaining and tracing and correcting faults in technological devices are necessary skills for the average accountant”

(Mohamed and Lashine 2003)

The advanced of technology also significantly influenced the process of decision making and information systems by the increasing use of accounting software-related and the internet. Furthermore, there have been changes in skills requirements to cope with the demands of a variety of clients who employ the diverse type of business and information system applications. The advancement of technology is the greatest element that changes accountants' roles from merely information provision to extend information facilitation (Jones and Abraham 2007). The effects of information technology on the accounting processes has greatly affected accountants' career since information technology has altered the way accounting processed and conducted in the organisations (Granlund 2007). Some of the effects also include organisations hiring policy, training policy even the formal curriculum in higher academic institutions (Jordan 1999).

Information is now extensively dispersed within organizations and becomes an important element of organisations key success (Mohamad and Ismail 2010). Real-time systems remove the uncertainty information by providing the accurate financial data and information. It is, therefore, accountants have an ability to eliminate unnecessary tasks in their accounting processes as well as increased organisation's efficiency by providing centralised accounting operations and faster financial reporting. Evolutions of accounting tasks have been started in the way information is processed, stored and communicated and ultimately the skills needed by

accountants. Information technology per se cannot produce meaningful and relevant information without the presence of information technology skills and competencies by accountants. Information technology advances such as electronic resource planning (ERP), database systems, online application and business accounting software have had significant impact on the financial environment (Jordan 1999; Chang 2002; Sürmen and Daştan 2007), and forcing accountants to revise their skills to cope with the technological environment (Jones and Abraham 2007; Chang and Hwang 2003; Bierstaker et.al 2001). The information technology trends with accountants' role implications have been explored as follows:

“... It is clear that technology has drastically changed the accounting profession.... for example, information can be provided in a timely and more accurate manner, but at the price of confidentiality. Some of the impacts of technology are neither positive nor negative; they are simply changes. So in essence, the impacts of technology on accounting have been positive, negative, and neutral, but each impact results in a demand on the profession to conform to the changes... (Jordan 1999, p. 341)

Since technology has made the accounting task would take a group of people to perform can be accomplished by one individual. It has forced accountants to overcome challenges and take the opportunity to move up the corporate ladder and join the management team. This requires accountants to possess other skills, i.e. leadership skills, project management and communication skills in analysing organisation's processes and functions for organisations' decision making and risk management.

The Concept of Information Technology Competencies

IT competencies can be identified as a set of IT-related knowledge and experience that a knowledge worker possesses (Basselier, Reich and Benbasat 2003). These competencies are imperative to enable accountants to perform their tasks (Wessel 2008) and constitute IT skills, management skills (in particular project management), and soft skills. These skills on the one hand aid routine business activities related to accountants' work. On the other hand they help them create an environment where these technologies operate at their optimum level, thus contributing to the strategic internal and external advantage of the business. This also signifies the changing face of accounting work and corresponding IT skills. Carnaghan (2003) views IT competencies as the qualities which are demonstrated by activities, such as the capacity to create a spreadsheet or database for a particular purpose, or the ability to use software. According to IFAC (2003), professional accountants are expected to possess necessary IT competencies. In fact, the credibility of the accounting profession in general depends on their success in fulfilling this obligation. Thus, every professional accountant is expected to act as a user, designer, manager, planner or evaluator of information systems; or in a combination of these roles (Wessel 2008). Table 1 illustrates definitions of IT competencies compiled from the works of various authors. However, in considering the definition of IT competencies of accountants, it is important to emphasise the need for both IT skills and relevant knowledge such as management skills and interpersonal skills of IT (IFAC 2003). Thus, integrating the above mentioned definitions and discussion, IT competencies in this paper are defined as;

““the set of IT skills and soft skills that accountants must possess to use IT effectively””.

Table 1. Definition of IT Competencies
 Source: Compiled from various authors

Author(s)	Definition of IT Competencies
Gold, Malhotra & Segard (2001)	“the shared IT capability that enables the flow of knowledge in organisations to be supported”
Tippin & Sohi (2003)	“consists of three important components, namely IT knowledge, IT operation, and IT objects”
Basselier, Reich & Benbasat et al. (2003)	“the set of IT-related knowledge and experience that a business manager possesses”
Carnaghan (2004)	“what would be demonstrated by activities, such as being able to create a spreadsheet or database for a particular purpose, or the ability to use tax planning software”
Croteau & Raymond (2004)	“to support the effective use and management of IT”

There is a need for complex set of competencies required by accountants in order to offer better quality service to customers (Jackling and Lange 2009; Awayiga, Onumah and Tsamenyi 2010). A good body of knowledge in finance and accounting theory (accounting knowledge) is not enough to become accountants who excel in a competitive environment. As a result, there are certain organisations which prefer their accountants to possess

people, organisational and conceptual skills in order to make appropriate use of IT skills in organisational settings. For example, for an accountant, skills and competencies in the use of spreadsheets, taxation software or accounting software is required. However, these software packages are process dependent and take input from various other areas of the organisation, at the same time providing output to additional areas of the organisation. In these circumstances, an individual needs to have complementary teamwork, interpersonal, and analytical skills in order to understand the information requirements of the process, to comprehend process hand offs and interfaces, and to process information to produce a useful output. Accountants' IT skills and competencies are highly required to react quickly and effectively in organisations. Consequently, the literature suggests four different set of skills required for a knowledge worker in the contemporary business paradigm to possess a relevant of credential. These skills are Technical skills, Organisational skills, People skills, and Conceptual skills (TOPC) as illustrated in figure 1. Technical skills involved specialised knowledge about methods, processes, and techniques designed to carry out specialised activity. These skills include IT skills which are the ability of individual to use information technologies and tools such as Microsoft Office, databases and Electronic Resource Planning (ERP); an electronic network and the other software and hardware used in execution of IT the business. IT skills are crucial for professional accountants since it enables them to use information effectively and efficiently (Greenstein-Prosch and McKee 2004; Mgaya and Kitindi 2008; Wessel 2008). Organisational skills can ensure that employees or workers plan and perform activities as efficiently as possible. The American Institute of Certified Public Accountants (AICPA) emphasizes project management skills as one of the organisational skills elements and imperative in supporting accountants to make the accounting process and the accounting system development process becoming more structured and organised (AICPA 2010). This can be achieved with the help of IT tools such as spreadsheet and database systems. People skills deal with human behaviour and interpersonal process which include elements of communication skills, teamwork skills and leadership skills (Flannes 2004). Communication skills enable accountants to collaborate with clients, to receive and disseminate information with ease, to present and defend views, to form reasoned judgement and to make decisions effectively (Awayiga, Onumah and Tsamenyi 2010; IFAC 2003). Teamwork is defined as the willingness to work with the team members, to exchange ideas and utilize their skills to provide ideas and suggestions to others (Baharun and Suleiman 2009). Teamwork skills provide accountants in supporting important financial information that can importantly contribute to a business's success and help to complete accounting tasks, evaluate clients and report and analyse financial statements. Leadership skills are a skill that helps the individual to align people and resources to drive business success (America's Leader in Continuing Professional Education). These skills enable accountants to support their organisations in an extensive range of job functions at various levels (IFAC 2011). Conceptual skills refer to skills in analysing and diagnosing problems (Salleh and Dnubisi 2006). These skills utilise the ability of a human to form concepts include critical thinking (Nickels, McHugh and Hugh 2010). Critical thinking is one of the elements in conceptual skills which are important for accountants to demonstrate the decision making process because accountants are not only required to prepare financial reports, but also necessary to analyse the reports. Accountants must be able to analyse a financial report and determine what information is beneficial for individual or organisation either in the short term or long term as they need to provide financial advice to their clients

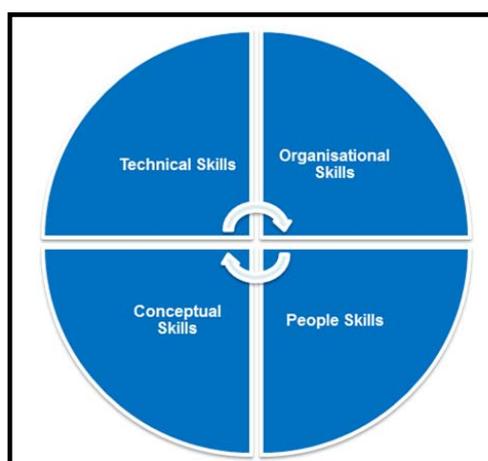


Figure 1: TOPC Framework

The TOPC framework consists the right mix of the above mentioned skills was purposely developed by the authors to prepare accountants to be effective and efficient knowledge workers. This TOPC framework (consist of technical skills, organisational skills, people skills, and conceptual skills) supports accountants in performing tasks/jobs in relation to the accounting processes such as auditing clients' financial reports, recording daily

financial transactions, preparing financial statements and making decisions. Furthermore, the American Institute of Certified Public Accountants (AICPA) asserted the values of professional accountants as competitive position by identifying element of skills such as communication skills, leadership skills, teamwork skills and critical thinking skills as well as project management cited by Institute of Management Accountants (Dillon and Kruck 2004). The TOPC framework is different from others (framework) because it is more emphasis on skills in operating IT, specifically in business and accounting IT-related software and hardware. It is believed that soft skills embodied in this framework are able to assist accountants to optimise the utilisation of IT as well as to improve their service and professionalism. For example, with emails and social networks, accountants are able to communicate faster and cheaper with their clients around the world and this will provide opportunities to expand their service and professionalism worldwide. The combination of IT skills and soft skills (IT competencies) in this framework is also required by accountants to provide information to senior management and organisational use. IT competencies have become important as adding value to the accumulated knowledge in managing the tasks in the workplace. The illustration as demonstrated in figure 2 outlines critical skills requirement of IT competencies for accountants derived from the literature. It is consists of soft skills and technical skills in IT.

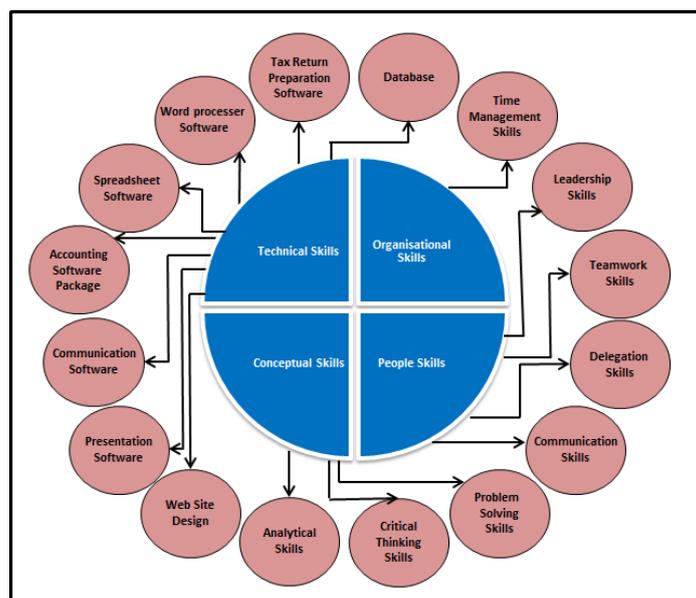


Figure 2: Critical Skills Required by Accountants

Over the past decade, the skills and competencies agenda has been widely discussed (Kavanagh and Drennan 2008). Mohamed and Lashine (2003) concluded that a dynamic business environment has encouraged accountants to improve their skills and competencies. This can be achieved by increasing the capacity related to accounting training and education. Prior studies indicated that, although IT skills are crucial for performing an accounting task, accountants must develop more than IT skills in order to succeed (Awayiga, Onumah and Tsamenyi 2010; De-Lange, Kacling and Gut 2006). This statement has been supported by Jackling and De-Lange (2009) who stated that accountants also need to place greater emphasis on soft skills in preparation for employment in accounting.

Awayiga, Onumah and Tsamenyi (2010) carried out research on the identification of knowledge and skills development of accounting graduates in Ghana. The study showed that, instead of IT skills, analytical/ critical thinking skills have been rated as being the most important skills for accountants. These results were consistent with the study by Kavanagh and Drennan (2008) which showed that accounting graduates at entry level are expected by employers to possess analytical and problem solving skills. On the other hand, Jackling and De-Lange (2009) have revealed strong support for evidence submitted by accountants in prior work experience suggesting that teamwork skills were regarded as a very important professional skill sought by the accounting profession. The authors also identified other skills such as leadership, communication and interpersonal skills as being elements that can be used to enhance the accountants' credibility.

It is well known that there is a widespread belief among employer and accounting practitioners that entry-level accountants were lacking in practical experience, had little understanding of how the real world works, poor communication skills and inadequate IT skills (Eide 2000). Some researchers argue that university academics should be committed to developing the appropriate skills for the professional practice of accounting in the future (IFAC 2003; Kermis and Kermis 2011). This statement corresponded to the view of Memiyanty,

Rozainun and Shith-Putera (2010) that employers should collaborate with academics in order to provide competent professional accountants.

RESEARCH METHODS

Respondents' Profile

This study was conducted among accounting academics in three Malaysian public higher learning institutions located in the Northern Region of Malaysia. In this study, both quantitative and qualitative data were collected from primary sources. In quantitative part, a total of 150 questionnaires were administered to the respondents from October 2011 until February 2012. The questionnaire was designed to address the optimum skill set of IT competencies required for accountants from the point of view of academics. This questionnaire was divided into four sections namely; Section A: Technical Skills, Section B: Organisational Skills, Section C: People Skills and Section D: Conceptual Skills. Section A of questionnaire was focused on IT skills set. These set of skills have been adopted from IFAC guideline and from the previous research. However, the other set of skills (Organisational, People and Conceptual Skills) have been derived from the literature review. In terms of response rate, only 90 valid responses were received (60% return rate). The collected data was statistically analysed using SPSS to identify the findings and results. Table 3 illustrates the profile of respondents. In qualitative measure, however, a total of 9 accounting academics in three Malaysian public higher learning institutions that are involved in delivering accounting education in their respective public higher learning institutions were interviewed using a semi-structured approach. Through such interviews, an understanding of IT skills and competencies in accounting processes is important that underpin performance in all types of accounting work (Hancock et al. 2009). The institutions' profiles are illustrated below in Table 4.

Table 3. Respondents' Profile (Quantitative Measure)

Characteristic (Variables)		Frequency	Percentage (%)
Level of Academic Education	Bachelor	-	0
	Master	54	60
	PhD	36	40
Professional Qualification	CA(M)	24	26.67
	PNA	3	3.33
	ACCA	3	3.33
	No Professional Qualification	60	66.67
Experience in Accounting Education Sector	1 – 3	12	13.3
	4 – 7	27	30
	8 – 11	30	33.3
	More than 11	21	23.3

Table 4. Respondents' Profile (Qualitative Measure)

Institutions	No. Contacted	No. Interviewed	Participation Rate	Interviewed Date(s)
University A	10	4	40%	12 October – 30 November 2011
University B	5	2	40%	15 November – 14 December 2011
University C	8	3	37.5%	23 November – 20 December 2011

PRELIMINARY FINDINGS AND DISCUSSION

What are the necessary IT Skills Required by Accountants from the perspective of accounting academics?

Table 5. The IT skills considered as important for accountants

Importance	Mean	SD	Rank
<i>IT Skills</i>			
Word Processing	4.43	0.504	2
Spreadsheets	4.67	0.479	1
Presentation Software	4.17	0.747	3
Web Site Design	3.07	0.640	4
Database	3.00	0.643	5
Communication software – email, social networks	2.50	1.000	6
Accounting Software Packages	3.00	1.000	5

All of the respondents agreed that skills in using IT are necessary to improve the quality of their services. The majority of them are directly involved in the integration of IT in the accounting curriculum at their respective universities. Table 5 indicates the ranks and types of IT skills sought by academics in ascending order of response. They identified all IT skills which are listed in this table as being important. However, spreadsheets (mean score 4.67) and word processing (mean score 4.43) were ranked as the top skills needing to be acquired by accountants. These results also have been supported by the findings acquired from the interview sessions. The statements are:

‘Spreadsheet skills are very useful in the accounting industry. This software is very helpful, especially in managing business data and to analyse the information. Skills in using spreadsheets can help accountants to complete the task quickly and accurately’

(Academic No. 1)

‘Accountants can perform bank reconciliations; calculate job costs, taxes, payment schedules, profit forecasts and stock control. In all these tasks the spreadsheet proves a very important tool in facilitating the process of calculation and production decisions’

(Academic No. 9)

‘Basically, word processing enables accountants to write their reports, edit, and retrieve data or text. Documents can also be printed. This software is very powerful in that documents can be prepared and revised in a highly efficient manner, especially to organise financial data’

(Academic No. 2)

Similar evidence is also found by Ismail and Abidin (2009) and Wessels (2008) where word-processing and electronic spreadsheet skills are considered as being adequate in attempts to identify critical IT skills among accountants, and useful in a relevant accounting/business context. During interviews, respondents were also asked about other skills which should be considered in the accounting process. They stated that accountants should be familiar with accounting software, since most of the accounting and financial reporting nowadays are generated via computer:

‘Nowadays, if accountants do not have a good understanding of IT skills, for example in an auditor’s role, it will create a problem because most of the evidences/documents are soft copies. Therefore, how would the auditor be able to audit companies if he/she is not familiar with the audit/accounting software, which will enable them to extract the data?’

(Academic No. 5)

‘Most business organisations are computerised. They use at least the UBS [Malaysian local accounting software] for generating their financial information. This is why we emphasize hands-on (practical) training in the handling of accounting software. There are several types of software being taught here. It is based on software compatibility with the type of organisation [whether a large, medium or small organisation]’

(Academic No. 9)

The above findings are consistent with those of Greenstein and Porch (2004), Mgaya and Kitindi (2008) and Ismail and Abidin (2009) who found that accounting and taxation software are included in the top five IT skills

necessary for accountants. On the other hand, when respondents were asked about advanced technology skills such as ERP and Network, they explained:

‘These skills are useful for accountants, but they are not as important as spreadsheet and database skills, which are directly involved in the accounting processes’
 (Academic No. 7)

‘We think accountants should focus on how to generate output from these software processes (spreadsheet, database) rather than concentrating on advanced technology skills (such as ERP, EDI, and network). Furthermore, there are many advanced IT services/people available in the market’
 (Academic No. 4)

This could be clarified by the fact that most advanced technology or software used today is very sophisticated and massive (Mgaya and Kitindi 2008). This is the reasons why advanced technology skills were not indicated by academics as among important skills need to accomplish most of the work that accountants need to do.

What are the soft skills required by accountants to maximize the use of information technologies from the perspective of accounting academics?

This section exhibits the soft skills proposed by academics to assist accountants to maximize the use of IT. Similarly as with Table 5, the rank orders are commensurate with the number of relevant respondents’ responses. Eight kinds of skills was derived from the literature review were asked to academics, as shown in Table 6.

Table 6: The IT skills considered as being important for accountants

Importance Skills	Mean	SD	Rank
Time Management The ability to manage and organise IT projects, always prioritising the tasks to be completed in one complete work project, and accommodate last minute changes that have to be incorporated into work.	3.77	0.679	5
Delegation The ability to collaborate, cooperate with fellow employees so as to enhance the decision making process using IT.	3.45	0.522	7
Leadership The ability to evaluate identifies, manage, and mitigate risks related to organisational productivity, advantage, goals, and objectives.	3.75	0.887	6
Teamwork Skills The ability to communicate effectively with clients and business partners, to work as a team member and as an individual and share knowledge.	3.89	0.751	3
Communication Skills The ability to use lateral thinking techniques so as to view information from different perspectives, for example business partners/customers.	4.09	0.701	1
Problem Solving Skills The capability to identify essential components of problems, to detect the cause of problems, to synthesis useful information from other information and to anticipate and resolve issues in managing important tasks.	3.80	0.664	4
Creative Thinking Skills The ability to think beyond traditional thinking and solve a problem with ideas and methods that had not been tried before	3.80	0.761	4
Analytical Thinking Skills The ability to analyse a problem analytically and logically.	3.96	0.881	2

Respondents distinguished a rank order which placed communication skills (mean score 4.09) as being the most required skills and delegation skills (mean score 3.45) as the least required. For respondents, regarding the ability of accountants to operate communication tools such as email, social network, teleconferencing and online messaging, much more depends on their communication skills as indicated in the following statement gathered from interview sessions:

‘Generally, accountants conduct day-today communication in a verbal format via email. It is a consistent with the ability to think and to exchange ideas in a verbal manner. In addition, the ability to

communicate with other teams on financial and business topics is the primary means for most day-to-day exchange of information'

(Academic No. 5)

Accountants are expected to communicate with clients as well as their work colleagues so that information is clearly understood and effectively disseminated. Respondents were also asked to indicate their importance level of communication skills, they said:

'I find it difficult to deal with others [clients, suppliers, colleagues] ... one of the most requisite skills of an accountant is to be able to communicate with them. This includes oral and written skills'

(Academic No. 3)

They also highlighted that oral and written skills are included in these skills as stated by one of accounting academic:

'Apart from speaking [oral], communicate with others in the written format such as using memo, letters and reports are important in accounting. Written skills provide the reader with concise, succinct and clear information'

(Academic No. 1)

Interestingly, while communication skills were placed in the top ranking by respondents, communication software was recorded as the least necessary IT skills requirement needed by accountants, as indicated in Table 5. This could be explained by the fact that respondents are unfamiliar with what soft skills need to be blended with the appropriate IT skills.

Table 6 also shows that respondents regard analytical thinking skills as the second most important skills to be achieved by accountants. Analytical skills are useful in organisations' business function because it includes both the ability to use good reasoning in analysing a situation and also the ability to solve a problem. For many academics, the focus on analytical skills has played a part in controlling the internal environment of organisations:

'I think analytical skills also include seeing the arguments on both sides of an issue, even if you don't agree with them, and being able to analyse the merits of each argument'

(Academic No. 7)

CONCLUSION

This study demonstrates the IT competencies required for accountants from the perspective of Malaysian accounting academics. Overall, the findings of this study suggest that accounting academics have an important role to play in determining accountants' IT skills and competencies for accountants. Academics viewed spreadsheets, word processing and accounting software as IT skills that need to be obtained by accountants in performing their job. However, academics are unfamiliar with the exact soft skills that should be blended in utilising IT. This may be the reason for the comparatively low ranking of IT skills required for accountants to master advanced technology. This study also can be further extended to identify the IT competencies maturity level of accountants in the accounting profession. In terms of limitations of a study, firstly, the study was confined to accounting academics in the three public higher learning institutions, where no account was taken of the other parties' or individual's 'life experiences'. Secondly, this study is a research in progress; therefore, there may be some other elements influencing academics in determining IT skills and competencies that were not considered. Accordingly, for future studies, it is recommended that more skills and competencies in IT are crucial in order to achieve better and more accurate results.

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