The 2nd ASEAN School of Business Network International Conference 2025

www.aseansbn.org August 7-8, 2025 Negeri Sembilan, Malaysia

Accountıng And Financial Management

Digital Competence of Malaysian Future Accountants

Mohammad Noor Hisham Osman[1]*, Siti Zaidah Turmin[2], Saidatunur Fauzi Saidin[3], Mohd Mohid Rahmat[4]

[1,2,3]Universiti Putra Malaysia, Malaysia

[4]Universiti Kebangsaan Malaysia, Malaysia

*Corresponding Author: mhisham@upm.edu.my

ABSTRACT

Digitalization plays a fundamental role in Industry 4.0 by transforming traditional manual processes into automated, intelligent systems. This transformation necessitates a workforce adept in digital competencies. Despite advancements in digital integration, there remains a paucity of research assessing the digital proficiency of future Malaysian accountants. Accordingly, this study aims to evaluate the digital competency levels of these future accountants (i.e., undergraduate accounting students) and identify determinants influencing these competencies. Specifically, it examines the impact of students' personal characteristics—academic performance, year of study, and gender—and social factors—parent education and parental home location —on digital competencies. Employing a quantitative methodology, data are collected through structured questionnaires administered to a representative sample of accounting undergraduates of several Malaysian public universities. The findings are anticipated to provide insights into the current state of digital readiness among aspiring accountants and inform curriculum development to better align accounting education with the demands of a digitalized professional landscape.

Keywords: Digital Competency, Accounting Students, Malaysia

DOI: https://doi.org/10.64458/asbnic.v2.87

INTRODUCTION

Digitalization plays a fundamental role in IR 4.0 as it drives the transformation of traditional or manual processes to become automation. For this, globally, it can be seen there are integrations of digital technologies into manufacturing processes and business operations. The Covid-19 pandemic amplifies everybody's attention to digitalization (Zhao, Llorente & Gómez, 2021; Coman, Ionescu, Duică, Coman, Uzlau, Stanescu & State, 2022). In the accounting industry, there is also a shift in the overall approach from manual to digital accounting systems (Arcega et al., 2015). Accounting industry now has arrived at what Bakulina et al (2020) called as artificial intelligence-assisted accounting stage. Consequently, accountants' jobs now have become more closely associated with digital competence. Digital competence for workplace related context can be understood as a combination of essential knowledge, skills, and

abilities, along with other traits that empower individuals to effectively and efficiently perform their job tasks involving digital tools and media (Oberländer, Beinicke, & Bipp, 2020).

For accountants, the main reason to master digital competency is to keep up with the accounting development. Accounting industry now is characterised by the extensive application digitalization in every aspect of accounting services (Pan and Seow, 2016). The digitalization of the accounting industry has revolutionized how accountants operate, with a stronger focus on technology-based solutions, data-driven insights, and advisory services (Awang et al., 2024). Secondly, accountants must master digital competency to thrive in competition in the accounting job market. As the accounting profession integrates new technologies, there will likely be fewer opportunities for accountants who lack digital skills. To stay competitive in the evolving job market, accountants should invest in developing these competencies and master the lastest technological advancements that shaping the industry (Taib, Awang, Shuhidan, Rashid, & Hasan, 2022).

The above points indicate that digital competency is very important for Malaysian future accountants to acquire. However, current Malaysian studies in this area are scarce except for Fazil, Ahmad, and Yusof (2022); Zulkarnain, Abdul Rahman, & Yusoff (2021) and Harun Rasit, Rosli, and Ibrahim (2012) There is, therefore, a gap in our knowledge in this area and we are still uninformed about the degree of digital competency of Malaysian future accountants and factors surrounding it. Accordingly, the general objective of this study is to examine the level of digital competency of Malaysian future accountants i.e. university accounting undergraduate students and its antecedents. Specifically, the first objective is to assess the level of digital competency of the accounting students. Secondly, to evaluate the effect of personal characteristics particularly (1) academic performance, (2) year of study in university, (3) gender, and social factors like (4) parent education and (5) parental home location on the students' digital competence level. The remainder of this paper is structured as follows - literature review, research methodology, findings and conclusion.

LITERATURE REVIEW

Digital Competency of Future Accountants

In the Malaysian context, there are only several studies on accounting students' digital competence. For instance, Harun Rasit et al. (2012) investigated the degree of digital competence of first year accounting students at the Universiti Utara Malaysia of different intake pathways. Digital competence was measured based on the magnitude of students' mastery of word processing; spreadsheet; database; PowerPoint presentation; and Internet and email. Data was gathered from 182 first-year accounting students, and the results revealed that students who entered via the diploma intake channel demonstrated superior digital competency compared to those from other pathways. However, students from the Matriculation and STPM intake channels showed below-average proficiency in spreadsheet applications.

Zulkarnain et al. (2021) assessed the level of digital competency of, among others, Malaysian accounting students in UiTM Kelantan branch. The digital competence is evaluated using the first version of Digital Competence Framework for Citizens (DigComp) published by The European Commission's Joint Research Centre. The framework suggested that digital competence covers five areas of competence: (1) information and data literacy; (2) communication and collaboration; (3) digital content creation; (4) safety; and (5) problem solving. The sample of the study is 389 UiTM Kelantan students (only 15.4% of them are accounting students). The results revealed that all students have high level digital competency in all competence areas (above 80% score) except for the third area i.e. digital content creation (below 80% score).

Another example of Malaysian study is Fazil et al. (2022) who investigated the impact of digital competence on accounting students' entrepreneurship intention. They tested the effect of three

dimensions of digital competence namely technical digital skills, cognitive digital skills and social-emotional digital skills. 52 accounting students from Universiti Pendidikan Sultan Idris responded to their online questionnaire. The results of the analysis revealed that only technical digital skills and social-emotional digital skills positively affected the students' entrepreneurship intention.

The literature reviewed above suggested that the level of digital competence is related to personal factors of the students as well as to social and geographical factors. Therefore, in this study we investigated the relation between digital competence of future accountants with the aforementioned factors:

Personal factors

Academic performance is a personal factor, and it reflects the knowledge, skills, and attitudes gained by students during their time in college. It is also a significant factor in determining their future career success, as strong academic outcomes often contribute to better career opportunities and professional growth (Mappadang, Khusaini, Sinaga, & Elizabeth, 2022). There can be a positive effect of students' academic performance on their digital competency i.e. students who perform better academically can become highly digitally competent. The main reason for this expectation is high academic performers student or high intellectual ability students can be more digital competence because they can be expected to be more capable of understanding and doing digital related tasks compared to low academic performers.

Secondly, the literature predict that students' digital competency will increase as they progress through their study in university. According to Draganac, Jović, & Novak (2022) the reason students in higher years of university report greater digital competencies may be due to their exposure to more specialized and practical courses. These advanced courses tend to involve the use of a wider range of digital tools compared to the more theoretical courses typically found in the earlier years of study.

Thirdly, is the gender, according to Grande-de-Prado, Cañón, García-Martín & Cantón (2020) the literature indicated that men are more likely to use of various websites and this enhances their familiarity with, and usage of this technology compared to women. For this reason, men are expected to have higher digital competence compared to the opposite gender. Grande-de-Prado et al. (2020) did a study on primary education university students and found that men are having better digital competence particularly in terms of information management and online collaboration. They concluded that men have higher competency because they are tending to use computers for technical tasks. Women have lower competency not because of less access to digitalization but they primarily use mobile phones for social purpose like social media, text, and graphic design.

Social and geographical factors

Families' support in using digital technologies is a social factor that can shape students' attitudes toward technology and digital competence (Kim, Hong, & Song, 2018). Parents with higher education can be expected to have higher financial capacity and hence can afford hardware like laptops and smartphones and internet charges. They also have the financial capacity to support their children cost of usage and training in digital technology (Mukhlasin, Sjarief, & Madyakusumawati, 2024). Furthermore, geographical factors such as the location of the student's parent home can significantly influence digital competence. Rural areas often face limited IT access due to poor infrastructure and fewer internet providers, while urban centers benefit from superior infrastructure and a wider range of internet services (Muhlasin et al., 2024). Level of internet connectivity is also always more consistent in urban compared to rural areas (Van Kessel, Wong, Rubinić, O'Nuallain, & Czabanowska, 2022).

Method

Data collection/Population and sample

The population of this study consists of undergraduate accounting students in Malaysian public universities. They are considered future accountants, as research has shown that approximately 80% of accounting students in public universities in Malaysia intend to pursue a career as certified public accountants (Osman, Ramali, & Turmin, 2019). To achieve the study's objectives, a non-probability convenience sampling method was employed. There are currently 20 public universities in Malaysia. However, four universities under the Malaysian Technical University Network (MTUN)—namely UTHM, UTeM, UMP, and UniMAP—do not offer accounting programmes, reducing the number of relevant institutions to 16. Of these, five are designated as research universities: Universiti Malaya (UM), Universiti Putra Malaysia (UPM), Universiti Kebangsaan Malaysia (UKM), Universiti Sains Malaysia (USM), and Universiti Teknologi Malaysia (UTM). The remaining 11 universities are classified as non-research public universities. This study excluded private universities to minimize potential inconsistencies in curriculum standards, learning environments, and student exposure, which could affect the reliability of the data (Taib et al., 2022).

Measurements and Questionnaire Design

This study collected data using a descriptive quantitative survey, administered using Google Form and distributed via electronic means i.e. email and whatsapp. The questionnaire form contains two main sections – (i) digital competence (dependent variable), and (ii) others (tested variables). The tested variables are (1) academic performance, (2) year of study in university, (3) parent education, (4) parental home location, and (5) prior formal training in ICT. Students are also asked to provide data about their age, ethnicity, and the name of their university.

Several measurement instruments have been developed to assess the dependent variable - digital competence. For example, the European Commission's DigComp 2.0 framework was utilized in the study by Tee et al. (2024). Another instrument, the Basic Digital Competences 2.0—a 24-item scale registered under the trademark COBADI (No. 2970648)—has been applied in studies by Taib et al. (2022) and Guevara-Otero et al. (2023). Additionally, Zulkarnain et al. (2021) developed their own version of a digital competence measurement tool. This study's selected instrument is the Digital Competence Questionnaire for Students (SDiCoS). Developed by a research team at the University of Córdoba, Spain (García-Peñalvo et al., 2022), SDiCoS is a 28-item questionnaire that evaluates digital competence across six dimensions (see Appendix 1). The instrument has been recognized as reliable and valid for measuring digital competence among university students (Tzafilkou, Perifanou, & Economides, 2022).

Findings and Discussions

The questionnaire was primarily distributed to students via WhatsApp messages, beginning on 30 May 2025. As of today, a total of 61 accounting students from Universiti Putra Malaysia have responded with usable data. Efforts to collect responses from students at other Malaysian public universities are still ongoing. The following presents the findings based on the data collected thus far:

Respondents Demographic

Table 1. Respondent profiles

Demography		Frequency	Percentage
1.Gender	Male	17	28%
	Female	44	72%
	Total	61	100%
2. Ethnic	Malay	39	64%

Demography		Frequency	Percentage
	Chinese	11	18%
	Indian	9	15%
	Other Malaysian	2	3%
	Total	61	100%
3. Age	19	2	3%
	20	17	28%
	21	14	23%
	22	11	18%
	23	12	20%
	24	3	5%
	26	1	2%
	27	1	2%
	Total	61	100%

Descriptive

Table 2. Descriptive Statistics

	Min	Max	Mean	S.D.
DV Digital Competence	2.74	6.00	4.611	.722
CGPA	3.00	5.00	4.310	.593
SEMESTER	1.00	8.00	3.340	2.144
GENDER	1.00	2.00	1.721	.452
PARENT EDUCATION	2.00	7.00	4.262	1.250
PARENT HOME LOC	1.00	3.00	1.623	.662
AGE	19.00	27.00	21.560	1.597
PR ICT TRAINING	1.00	3.00	1.820	.785
ETHNICITY	1.00	4.00	1.574	.865

Reliability of The Instrument

Table 3. Reliability Statistic

Independent Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Digital Competence	.939	.941	23

According to Taber (2018), a Cronbach's Alpha value of 0.80 or above is considered to indicate an acceptable level of reliability. In this study, the independent variable, digital competence, yielded a Cronbach's Alpha of 0.939, which exceeds the recommended threshold. This high coefficient reflects strong internal consistency among the questionnaire items, indicating that they consistently measure the same underlying construct.

Objective 1 - To assess the level of digital competency of the accounting students

To interpret the mean score for digital competence, this study categorizes the scores into three levels: 1–2 (low), 3–4 (moderate), and 5–6 (high). As shown in Table 2, the mean digital competence score among future accountants is 4.611, which falls within the moderate to high range. This finding is consistent with the results of Taib et al. (2022), who reported that Malaysian future accountants possess a moderate level of ICT knowledge, with a mean score of 3.17 out of 5.

Objective 2 - To evaluate the effect of personal characteristics particularly (1) academic performance, (2) year of study in university, (3) gender, and social factors like (4) parent education and (5) parental home location on the students' digital competence level.

Personal characteristics:

Academic performance (CGPA)

Table 4. Academic performance (CGPA)

CGPA	Mean	N	S. D.
2.6 – 3.0	4.185	4	.695
3.1 – 3.5	4.666	34	.784
3.6 – 4.0	4.603	23	.629
Total	4.611	61	.7211

Table 4 shows that accounting students with a CGPA above 3.0 exhibit higher levels of digital competency compared to those with lower CGPAs (Table 4). This finding aligns with the expectation that students with stronger academic performance are likely to be more digitally competent, as they may possess greater ability to understand and carry out digital-related tasks than their lower-performing peers.

Years of study

Table 5. Semester of Study

Semester	Mean	N	S. D.
1	5.044	4	.769
2	4.598	33	.736
4	4.714	12	.633
5	2.739	1	.
6	4.609	3	.478
7	5.478	1	.
8	4.391	7	.550
Total	4.611	61	.722

In terms of academic year or semester, the data indicates that first-semester students exhibit the highest level of digital competency (average 5.044 over 6.000, Table 5). This may be attributed to the fact that younger students tend to show greater enthusiasm and adaptability in acquiring digital skills. This observation aligns with the findings of Mukhlasin et al. (2024), who reported that younger students generally demonstrate higher levels of digital competence. However, it contrasts with the results of Draganac et al. (2022), who found that students in higher years of study reported greater digital competency compared to those in earlier semesters.

Gender

Table 6. Gender

Gender	Mean	N	S. D.
Male	4.6675	17	.56541
Female	4.5889	44	.77869
Total	4.6108	61	.72185

Table 6 indicates that male accounting students at UPM demonstrate higher digital competency scores compared to their female counterparts. This finding is consistent with previous research, which has shown that women tend to self-rate their digital abilities significantly lower than men (Grande-de-Prado et al., 2020; Hargittai & Shafer, 2006).

Social and geographical factors:

Parent education

Table 7. Parent education level

Parent education	Mean	N	S. D.
Primary school	4.044	1	.
Secondary school	4.602	20	.639
Diploma or certificate	4.549	16	.935
Bachelor degree	4.857	14	.712
Master degree	4.435	6	.368
Doctoral degree (Phd)	4.446	4	.729
Total	4.611	61	.722

Although it is logical to assume that parents with higher education levels—such as master's or PhD degrees—would possess greater financial capacity to provide access to digital tools (e.g., laptops, smartphones, internet access) and support their children's digital learning, Table 7 above presents a different trend. Students whose parents hold bachelor's degrees, diplomas, or certificates reported higher levels of digital competency (with an average score of 4.5 out of 6 or above) compared to those whose parents hold master's or PhD degrees (who reported an average of 4.4 out of 6).

Parental home location

Table 8. Parental home location

Location	Mean	N	S. D.
Urban	4.585	29	.815
Suburban	4.600	26	.583
Rural	4.783	6	.890
Total	4.611	61	.722

The analysis also revealed another unexpected trend - students whose parental home in rural areas reported higher levels of digital competence compared to those from urban and suburban areas (see Table 8). This finding contrasts with prior literature, which has generally suggested that accounting students from urban households tend to exhibit higher digital competency due to better access to infrastructure, a wider range of internet services (Muhlasin et al., 2024), and more reliable internet connectivity (Van Kessel et al., 2022).

Other factors:
Prior Training in ICT

Table 9. Prior training in ICT

Training	Mean	N	S. D.
No	4.502	25	.859
High school computer/ICT training	4.779	22	.500
University level ICT course	4.540	14	.750
Total	4.611	61	.722

Table 9 shows that students who received ICT training during high school reported higher levels of digital competency (mean = 4.779) compared to their peers who received training at the university level (mean = 4.540) and those who had no formal training (mean = 4.502). This finding reported in the table above is consistent with Zhao et al. (2021), who reported that students with prior formal ICT training demonstrated higher levels of digital competence compared to those without such training.

Ethnicity

Table 10. Ethnicity

Etnicity	Mean	N	S. D.
Malay	4.624	39	.674
Chinese	4.269	11	.772
Indian	4.889	9	.824
Other Malaysian	4.978	2	.584
Total	4.611	61	.722

Among the major ethnic groups in Malaysia, Indian students reported the highest level of digital competence (mean = 4.889 out of 6), followed by Malay students (mean = 4.624) and Chinese students (mean = 4.269).

SUMMARY

Digital competency is a critical skill that Malaysian future accountants must acquire. However, current research on this topic within the Malaysian context remains limited, creating a notable gap in knowledge. As a result, we are lacking a clear understanding of the level of digital competence among Malaysian accounting undergraduates and the factors that influence it. Accordingly, this study aims to address that gap by examining the digital competency levels of future accountants in Malaysia and identifying its antecedents. Specifically, the first objective of this study is to assess the level of digital competency of the accounting students. Secondly, to evaluate the effect of personal characteristics particularly (1) academic performance, (2) year of study in university, (3) gender, and social factors like (4) parent education and (5) parental home location on the students' digital competence level.

This study is currently at its preliminary stage. As of now, data collected from 61 accounting students at Universiti Putra Malaysia are available for initial analysis. Data collection efforts from other Malaysian public universities are still ongoing. Albeit the limited sample size, we can share only several findings:

- The mean digital competence score among future accountants is 4.611 over 6.000, which falls within the moderate range
- First-semester students exhibit the highest level of digital competency (average 5.044 over 6.000)
- Students whose parents hold bachelor's degrees, diplomas, or certificates reported higher levels of digital competency (with an average score of 4.5 out of 6 or above) compared to those whose parents hold master's or PhD degrees (who reported an average of 4.4 out of 6).
- Students whose parental home located in rural areas reported higher levels of digital competence (mean = 4.783) compared to those from urban (mean = 4.585) and suburban (4.600)

This preliminary study is subject to two key limitations. Firstly, this study relied on a self-perception questionnaire rather than an objective assessment of digital competence. As such, the responses were subjective and may not accurately reflect the actual digital competence of the students. Secondly, the sample was drawn from a single university, which introduces a sampling bias and limits the generalizability of the findings. To enhance the validity and applicability of this research, this study will increase the sample size and will collect data from other Malaysian public universities.

ACKNOWLEDGEMENTS

The authors would like to thank the School of Business and Economics, Universiti Putra Malaysia for providing financial support under the School's research fund (GPSPE/2024/6303854).

REFERENCES

Arcega, C. K., Datinguinoo, E., Guerra, J., Guno, C., Mayuga, H. J., Villamena, E., & Manongsong, J. L. (2015). Computerized vs. non-computerized accounting system of small and medium enterprises in Lipa City, Philippines: A comparative analysis. *Asia Pacific journal of academic research in business administration*, *1*(1), 48-55.

Awang, Y., Nasir, N. E. M., Taib, A., Shuhidan, S. M., & Ifada, L. M. (2024). Digitalization of Accounting Profession: A Decade of Bibliometric Analysis. *Advances in Social Sciences Research Journal*, *11*(5).

Bakulina, G., Kalinina, G., Luchkova, I., Pikushina, M., & Gracheva, A. (2020). Transformation of the accountancy profession during digitalization of agriculture. In *BIO Web of Conferences* (Vol. 17, p. 00188). EDP Sciences.

Coman, D. M., Ionescu, C. A., Duică, A., Coman, M. D., Uzlau, M. C., Stanescu, S. G., & State, V. (2022). Digitization of accounting: The premise of the paradigm shift of role of the professional accountant. *Applied Sciences*, *12*(7), 3359.

Draganac, D., Jović, D., & Novak, A. (2022). Digital Competencies in Selected European Countries among University and High-School Students: Programming is lagging behind. *Business Systems Research: International journal of the Society for Advancing Innovation and Research in Economy*, *13*(2), 135-154.

Fazil, N. F. M., Ahmad, N. L., & Yusof, R. (2022). Digital Skills in Igniting Accounting Undergraduates' Entrepreneurship Intention. *International Business Education Journal*, *15*(2), 1-13.

Grande-de-Prado, M., Cañón, R., García-Martín, S., & Cantón, I. (2020). Digital competence and gender: Teachers in training. A case study. *Future internet*, *12*(11), 204.

Guevara-Otero, N., Cuevas-Molano, E., Vázquez-Cano, E., & López-Meneses, E. (2023). Analysis of predisposition in levels of individual digital competence among Spanish university students.

Hargittai, E., & Shafer, S. (2006). Differences in actual and perceived online skills: The role of gender. *Social science quarterly*, *87*(2), 432-448.

Harun Rasit, M. H., Rosli, K., & Ibrahim, M. A. (2012). The ICT competencies of new accounting students of different intake channels: The Case of the Universiti Utara Malaysia. *Malaysian Journal of Educational Technology*, *12*(2), 33-40.

Kim, H. J., Hong, A. J., & Song, H. D. (2018). The relationships of family, perceived digital competence and attitude, and learning agility in sustainable student engagement in higher education. *Sustainability*, *10*(12), 4635.

Mappadang, A., Khusaini, K., Sinaga, M., & Elizabeth, E. (2022). Academic interest determines the academic performance of undergraduate accounting students: Multinomial logit evidence. *Cogent Business & Management*, *9*(1), 2101326.

Mukhlasin, M., Sjarief, J., & Madyakusumawati, S. (2024). Digital Divide and Digital Competence among Accounting Students. *JPI (Jurnal Pendidikan Indonesia)*, *13*(1).

Oberländer, M., Beinicke, A., & Bipp, T. (2020). Digital competencies: A review of the literature and applications in the workplace. *Computers & Education*, *146*, 103752.

Osman, M. N. H., Ramali, W., & Turmin, S. Z. (2019). Factors Affecting Accounting Students' Career Choice. *Research in Accounting and Sustainability*. *Publisher: University Putra Malaysia*.

Pan, G., & Seow, P. S. (2016). Preparing accounting graduates for digital revolution: A critical review of information technology competencies and skills development. *Journal of Education for business*, *91*(3), 166-175.

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in science education*, *48*, 1273-1296.

Taib, A., Awang, Y., Shuhidan, S. M., Rashid, N., & Hasan, M. S. (2022). Digitalization in accounting: Technology knowledge and readiness of future accountants. *Universal Journal of Accounting and Finance*, *10*(1), 348-357.

Tzafilkou, K., Perifanou, M., & Economides, A. A. (2022). Development and validation of students' digital competence scale (SDiCoS). International Journal of Educational Technology in Higher Education, 19(1), 30.

Van Kessel, R., Wong, B. L. H., Rubinić, I., O'Nuallain, E., & Czabanowska, K. (2022). Is Europe prepared to go digital? making the case for developing digital capacity: An exploratory analysis of Eurostat survey data. *PLOS Digital Health*, *1*(2), e0000013.

Zhao, Y., Llorente, A. M. P., & Gómez, M. C. S. (2021). Digital competence in higher education research: A systematic literature review. *Computers & Education*, *168*, 104212.

Zhao, Y., Sánchez Gómez, M. C., Pinto Llorente, A. M., & Zhao, L. (2021). Digital competence in higher education: Students' perception and personal factors. *Sustainability*, *13*(21), 12184.

Zulkarnain, N., Abdul Rahman, S., & Yusoff, M. S. A. (2021). Digital competency among students: a case study at UiTM Kelantan Branch. *Journal of Academic Library Management (AcLiM)*, *1*(1), 55-64.