



Expectation Gap on Accounting Graduates' Skill Attributes between Accounting Educators and Employers in Industry 4.0 Environment: a Malaysian Evidence

Erlane K Ghani ^{1*}, Azleen Ilias ², Kamaruzzaman Muhammad ³, Nor Atikah Rosley ⁴,
Mazurina Mohd Ali ⁵, Citra Sukmadilaga ⁶

^{1*} Professor, Faculty of Accountancy, Universiti Teknologi MARA Cawangan Selangor, Puncak Alam, Malaysia

² Senior Lecturer, Department of Accounting and Finance, Universiti Tenaga Nasional, Muadzam Shah, Malaysia

³ Associate Professor, Faculty of Accountancy, Universiti Teknologi MARA Cawangan Selangor, Puncak Alam, Malaysia

⁴ PhD Student, Faculty of Accountancy, Universiti Teknologi MARA Cawangan Selangor, Puncak Alam, Malaysia

⁵ Associate Professor, Faculty of Accountancy, Universiti Teknologi MARA Cawangan Selangor, Puncak Alam, Malaysia

⁶ Associate Professor, Faculty of Economics and Business, Universitas Padjadjaran, Bandung, Indonesia

* **Corresponding Author:** erlanekg@uitm.edu.my

Citation: Ghani, E. K., Ilias, A., Muhammad, K., Rosley, N. A., Mohd Ali, M., & Sukmadilaga, C. (2024). Expectation Gap on Accounting Graduates' Skill Attributes between Accounting Educators and Employers in Industry 4.0 Environment: A Malaysian Evidence. *Educational Administration: Theory and Practice*, 30(3), 1-15. doi: 10.52152/kuey.v30i3.1059

ARTICLE INFO

ABSTRACT

Received: 10 Feb 2023

Accepted: 27 Apr 2023

In the context and dynamics of the Industry 4.0 environment, whereby the business horizon and extent are no longer restricted by national boundaries, employers may have high expectations for the skills and attributes of accounting graduates, which may exceed the expectations of the accounting educators who are involved in the curriculum design of the accounting courses at the universities. This study aims to investigate the expectation gap between accounting educators and employers regarding the skill attributes of accounting graduates in an Industry 4.0 environment. In this study, 33 skill attributes were identified to determine whether educators and employers have different expectations regarding the skill attributes of accounting graduates. Using a questionnaire survey distributed to 209 educators and employers, this study demonstrates that 24 of the 33 attributes demonstrate significant differences, including risk analysis, financial analysis, and communication. Contrary to the findings of previous studies, the results of this study indicate that accounting educators have higher expectations for the skill attributes of accounting graduates compared to employers. The findings of this study indicate that universities must acquire a greater comprehension of the skill requirements of employers so that accounting graduates can better meet these requirements as well as the essential broader educational goals of a university degree.

Keywords: Expectation Gap, Educators, Employers, Accounting Graduates, Malaysia.

INTRODUCTION

The Industry 4.0 framework facilitates the integration of people, information, and communication technologies in a closely interconnected environment, hence enabling the smooth exchange of a significant volume of information (Ghani, 2020). Although the advent of Industry 4.0 offers prospects for those who are open to embracing it, this landscape also provides significant obstacles to conventional occupations. The accounting profession is not immune to this situation. The advent of Industry 4.0 is expected to have a significant influence on existing accounting procedures. This is primarily due to the enhanced ability of accountants to access real-time data that was previously inaccessible. Consequently, the quality of data will be improved through heightened accuracy and timeliness, leading to increased efficiency and assurance in data management. Furthermore, this data can be utilized for various decision-making purposes, thereby expanding its utility beyond

traditional accounting practices (Akbulaev, Mammadov, & Shahbazdov, 2021). During her keynote speech at the IIUM International Accounting Conference on Big Data Analytics 2020, Dr Nurmazilah Dato' Mahsan, the former Chief Executive Officer of the Malaysian Institute of Accountants (MIA), emphasised the need to incorporate data analytics and other technological advancements aligned with the principles of Industry 4.0 in order to ensure the long-term viability of the accounting profession (MIA & ACCA, 2020).

In order to align with the demands of Industry 4.0, the Malaysian government has continuously emphasized the need for universities to provide education that is responsive to the dynamic nature of this evolving landscape. Consequently, public universities have been under pressure to cultivate graduates of exceptional quality. The Committee to Strengthen the Accountancy Profession (CSAP) (2014) conducted a study that revealed that public universities are facing challenges in producing accounting graduates who possess the necessary competence. This issue arises from disparities in examination standards, the limited acquisition of high-level professional skills post-graduation, and the emphasis placed by universities on their own set of competencies and standards rather than aligning with employer expectations. The paper conveys the notion that accounting graduates from public colleges exhibit a lack of competence, thereby diminishing their prospects of securing employment. The findings from the evaluation of students' performance in practical training during "Hala Tuju 2", conducted by employers, align with the results obtained. The evaluation indicated that students demonstrated positive attributes such as self-discipline, commitment, adherence to instructions, and cooperation. However, there were identified deficiencies in certain areas, particularly in the field of information technology (Azhar, Jalaludin, Ghani, Ramayah, & Nelson, 2023).

In order to determine the skill qualities expected of accounting graduates in the context of the Industrial 4.0 environment, it is essential to conduct a thorough and complete inquiry that encompasses the perspectives of both accounting educators and employers. Hence, the primary objective of this study is to address the following research questions:

1. What are the expectations of accounting educators for accounting graduates in Malaysian universities?
2. What are the expectations of the employers for accounting graduates in Malaysian universities?
3. Is there an expectation gap between the accounting educators and employers for the accounting graduates and employers for the accounting graduates in Malaysian universities?

If there exists a substantial disparity in expectations between accounting educators and companies, it is imperative for institutions to reevaluate their current curriculum to align with the employer's expectations. Section 2 provides a comprehensive overview of the relevant literature pertaining to the present topic. Section 3 subsequently delineates the study design. The results of this study are presented in part 4, while Section 5 serves as the concluding part.

LITERATURE REVIEW

Industry 4.0 and Accounting Profession

Industry 4.0 is a unique and expansive ecosystem that builds upon and amplifies the effects of digitalization in unforeseen manners. The described phenomenon is an environment of artificial intelligence that is distinguished by the presence of "cyber-physical systems." These systems possess novel capabilities and connectedness for both people and machines (Liu & Xu, 2017). The current period is expected to have a significant influence on the vulnerability of employment (Frey & Osborne, 2013) as a result of the increasing substitution of various human-performed occupations by computerization (Blasi, Freeman, & Kruse, 2013; Akbulaev et al., 2021). Based on the study conducted by Frey and Osborne (2013), it is evident that a proportion slightly below 50% of all vocations in the United States face the possibility of becoming obsolete. In the context of Industry 4, robots possess the ability to execute not just mundane jobs but also intricate responsibilities that surpass conventional expectations. According to the study conducted by Wilkinson, Hislop, and Coupland (2016), it was found that Industry 4.0 presents both possibilities and problems for many professions, including accounting. The study suggests that those who are willing to adapt to this new age may benefit from the chances it provides. However, it also highlights that conventional professions, such as accounting, are particularly vulnerable to the impact of technological advancements. Accounting professionals may effectively adapt to the forthcoming period by enhancing their consciousness, augmenting their expertise via engaging in professional growth and ongoing education, fostering the development of skills among emerging professionals, and fostering collaboration with peers from related disciplines (Jarosz, Soltysik, & Zakrzewska, 2020).

Ghani and Muhammad (2019) argue that the incorporation of systems within the context of Industry 4.0 is

expected to have significant significance. Furthermore, they suggest that interactions with local accounting matters in the corporate landscape would exhibit strong interdependencies. The advent of Industry 4.0 is expected to bring about significant changes in the field of accounting. This is primarily attributed to the ability of accountants to access real-time data that was previously inaccessible. By leveraging this capability, accountants can enhance the quality of data through improved accuracy and timeliness. Consequently, this will lead to increased efficiency in data management, as well as improved assurance of the integrity of the data. Furthermore, it has been argued by Davies (2015) that accountants would have the capability to access real-time data that was previously inaccessible. Burritt and Christ (2016) anticipate that this particular setting will lead to an increase in the legitimacy and importance of journalism. Accounting professionals will be able to allocate less time towards automated tasks and allocate more time towards strategic considerations such as optimizing resource utilization. This will enable accountants to allocate less time towards operational activities, affording them more opportunities to focus on strategic matters. Nevertheless, in order to meet the increasing demand for their services, accountants must possess a comprehensive understanding of the artificial intelligence domain.

Professional organizations can play a crucial role in collaborating with universities to develop a curriculum that meets the needs of new graduates entering the accounting profession. This is particularly important as graduates must adapt to the evolving digital landscape of Industry 4.0. By providing support and guidance, these professional groups can effectively facilitate the transition of graduates into the accounting profession (Herbert, Rothwell, Glover, & Lambert, 2020). This aligns with the idea by Ghani and Muhamad (2019) that the objective of higher education is to foster the holistic development of students, including their intellectual, emotional, physical, artistic, creative, and spiritual capacities. The primary objective of higher education is to cultivate within people a deep respect for the value of life and a strong enthusiasm for the pursuit of knowledge. The deficiency in accounting students' understanding of Industry 4.0, as a result of their limited exposure to industry-based practices, has been acknowledged by Omar and Hasbolah (2018). Consequently, it is imperative to integrate the breakthroughs in the artificial intelligence domain into the accounting curriculum.

According to Islam, Ahmed, Khalifah, Saddiq and Faheem (2015), universities have undergone a transformation in their traditional duties, as they now prioritize the provision of human capital to meet the demands of employers. Consequently, higher education institutions respond to the dynamic landscape by modifying existing curricula or introducing new courses and instructional approaches (Jabbary & Madhoshi, 2014). The primary objective of these policies is to enhance the employment prospects of graduates. One potential approach to accomplish this objective is allocating resources towards technological advancements that facilitate practical learning experiences. Additionally, offering possibilities for simulated participation in Industry 4.0 contexts, such as role-playing situations, may also be beneficial (Mason, Williams, & Cranmer, 2009). Collaborating with professional organizations and accountants enables academic institutions to provide accounting graduates with courses that are relevant in the context of Industry 4.0 (AICPA, 2018). Therefore, it is essential for educational institutions to adequately equip accounting graduates with the necessary skills and knowledge to effectively navigate the challenges posed by Industry 4.0 preparations (Bonekamp & Sure, 2015).

The digitalization of education has expanded the range of teaching and learning techniques available to educators (Schuster et al., 2015). Consequently, this phenomenon potentially offers educators the chance to develop strategies and approaches for imparting their expertise to students in ways that are relevant and applicable, thus enabling graduates to adjust and sustain their marketability (Karatat, Bademcioglu, & Celik, 2017). Nevertheless, it is essential for educators and institutions to possess a comprehensive understanding of the demands placed by employers throughout the age of Industry 4.0 in order to ensure the effectiveness of teaching and learning processes. To effectively position themselves as emerging market participants and achieve success in their respective domains, accounting graduates must possess a high degree of competitiveness. Nevertheless, a considerable number of recent accounting graduates had challenges in securing jobs as a result of the prevailing perception that they have insufficient abilities, traits, and credentials (Adhariani, 2020).

Graduate Employability

The concept of "employability" has consistently been recognized as a crucial aspect of the strategic direction of the government's education objectives (Hillage & Pollard, 1998). Nevertheless, this phrase spans a broad spectrum of interpretations. Tsiligiris and Bowyer (2021) provided a definition of employability as the acquisition of skills, knowledge, experiences, and personal attributes that enhance an individual's prospects of securing employment in their preferred domain. Conversely, de Grip, van Loo, and Sanders (2004) conceptualized employability as encompassing workforce mobility, training opportunities, and adaptability in job functions. Different scholarly investigations have provided varying definitions of graduate employability. For instance, Harvey (2004) conceptualized it as the process of acquiring knowledge, skills, and abilities. On the other hand, Hillage and Pollard (1998) described graduate employability as including the capacity to secure initial

employment, sustain work, and secure subsequent job opportunities. According to Stiwne and Alves (2010), employability encompasses the behavioral competence and the capacity of students to exhibit a range of personal, performative, and organizational skills, in contrast to conventional academic and theoretical knowledge and skills.

Within the sphere of employment and the labor market, the term "employability" pertains to the probability that a person would get employment with an organization based on their skill set aligning with the requirements and anticipations of prospective employers (Ghani, 2020). The acknowledgment of 'employability' as synonymous with 'employment rate' is supported by the use of employment rate as an indicator of universities' effectiveness in fostering employability, as seen in several governmental contexts, including the United Kingdom and Malaysia (Lees, 2002). Consequently, several researchers have used the phrase 'employability' interchangeably with 'employment rate' in their respective studies.

Employers encounter the difficulty of acquiring skilled personnel to maintain their company performance in the age of Industry 4.0, whereby talent may be sourced from many locations worldwide. According to the findings of the CSAP (Centre for the Study of American Progress), it is probable that employers would exhibit a preference for hiring international graduates over domestic university graduates, assuming that the skill level of local graduates stays unchanged. Ngoo, Tiong, and Pok (2015) examine the role of accountants in the contemporary competitive landscape, specifically within the context of Industry 4.0. The authors raise the inquiry about the key abilities that are deemed crucial for accountants in Malaysia. Singh, Thambusamy, and Ramly (2014) posited that the employability of accounting graduates has evolved to include not just their academic qualifications and professional experience, but also supplementary non-technical or job-related competencies that enhance the efficiency of organizational operations. If this scenario holds true, it raises the inquiry about the capacity of colleges to equip students with these proficiencies.

Graduates' Skill Attributes

Extensive research within the field of accounting has been conducted to investigate the characteristics of accounting graduates that are highly esteemed by employers. The aforementioned study has shown that employers exhibit a preference for a range of traits. In a study conducted by Kim, Ghosh, and Meng (1993), a sample of 750 employers from both public and private sectors in Singapore was polled. The objective of the study was to ascertain the selection criteria used by these businesses when hiring accounting graduates. The researchers found that the traits that received the highest scores were work interest and motivation. Hassall, Joyce, Montao, and Anes (2005) conducted a study of 214 employers in the field of management accounting in Spain and the United Kingdom. According to their survey, the researchers found that accounting graduates highly regarded general qualities such as teamwork, organizational abilities, computer proficiency, communication aptitude, and time management. In a study conducted by Simons, Higgins, and Lowe (1995), a total of 167 employers in the United Kingdom were polled. The researchers discovered that the most highly valued traits among employers were drive and motivation, with teamwork, oral communication, arithmetic abilities, excitement, and interpersonal sensitivity following closely. The least crucial criteria were degrees that were relevant to the field and academic achievement. In contrast, the study conducted by Ahadiat and Smith (1994) included 357 companies across many sectors, including accounting businesses in the United States. Their findings revealed that academic accomplishment was considered one of the "twelve most significant competencies," alongside personality traits and social attributes.

Table 1. Demographic Profile of Respondents

Basic Academic Skills	Higher-Order Thinking Skills	Personal Qualities	
Reading Writing Science Math Oral communication Listening	Learning Reasoning Thinking creatively Decision-making Problem-solving	Responsible Self-confidence Self-control Social skills Honest Integrity Adaptable and flexible	Team spirit Punctual and efficient Self-directed Good work attitude Well-groomed Cooperative Self-motivated Self-management

According to Harvey and Mason (2013), employers make hiring decisions for graduates based on several factors. These factors include the graduates' knowledge and ideas that they can contribute to the organization, their ability to quickly acquire new knowledge, their capacity to adapt to changing circumstances and be flexible, their analytical and logical reasoning skills, their problem-solving abilities, their synthetic thinking skills, and their potential to drive innovation. According to Shafie and Nayan (2010), employers often want certain qualities in their employees, including honesty, integrity, a professional demeanor, reliability, a strong work ethic, a comprehension of the repercussions of one's actions, a favorable attitude towards work, accountability, and self-control. As shown in **Table 1**, Robinson (2000) endeavored to ascertain and classify these abilities into three distinct categories: essential academic skills, higher-order thinking skills, and personal qualities.

In accordance with existing literature (Islam et al., 2015), it is often held that individuals with a university degree are more likely to get employment opportunities if they possess competencies that contribute to the effective delivery of postsecondary education. According to Morshidi et al. (2012), the key determinants of employability are the skills, talents, competencies, and qualities possessed by graduates. The employability of graduates is progressively shaped by the personal characteristics of the individuals, including adaptability and flexibility, as well as the behaviors associated with professional advancement and self-management, often known as soft skills (Schulz, 2008). The aforementioned statement aligns with the findings presented in *The Outlook of the Accountancy Profession in Malaysia*, a publication authored by the Malaysian Institute of Accountants (MIA & ACCA, 2020). This publication delves into the topic of training future accountants and emphasizes the essential skill sets required to enhance their marketability and relevance in the field. McMurray, Dutton, McQuaid, and Richard (2016) posit that accounting graduates are expected to possess a range of traits, including digital skills, lifelong learning abilities, competence in English, soft skills such as cooperation, leadership, and communication, emotional intelligence, as well as analytical and reasoning skills. The skill needs of the accounting profession have transformed due to the globalization of corporate operations, which has subsequently led to the emergence of Industry 4.0. This transformation demands proficiency in both accounting and general skills. The potential outcome of this situation is a discrepancy in skills between the expectations of companies for accounting graduates, both existing and prospective, and the curriculum provided by institutions to their students. The phenomenon referred to as the skill expectation gap pertains to the disparity between the abilities obtained via university education and the skill requirements anticipated by employers.

Skill Expectation Gap

Several studies have attempted to define the disparity between skills and expectations (Tan & Laswad, 2018; Succi & Canovi, 2019; Bridgstock & Jackson, 2019; Pham & Jackson, 2020). The concept of the skill expectation gap pertains to the discrepancy that exists between the skill sets possessed by individuals who have completed university education and the skill sets that are sought after by employers in the workforce. The extent and characteristics of the skills gap are contingent upon the presence and pedagogical approach of relevant skills within the university curriculum, as well as the methods used for instruction and assessment (Tan & Laswad, 2018). Academic institutions have made efforts to synchronize their educational programs with the skill sets desired by employers. Nevertheless, they have faced various challenges, resulting in an ongoing disparity in skills acquisition (Bridgstock & Jackson, 2019). Nevertheless, colleges may have challenges in consistently identifying and offering the skills required by businesses, given the wide range of employment types and the ever-changing nature of the labor market (Pham & Jackson, 2020). On the contrary, it is suggested that colleges should prioritize the cultivation of soft skills and personal competencies since they are thought to have a lasting influence on the employability of individuals after graduation (Suleman, 2018). According to the recommendations put out by Bridgstock and Jackson (2019), it is advisable for colleges to steer clear of the difficulties and policy conflicts that arise when attempting to improve employability via the cultivation of certain abilities. The authors said that the primary objective of universities is to provide students with immediate postgraduate achievements, professional proficiency, and the capacity to lead productive and purposeful lives throughout the course of their lives. According to Frankham (2017), there is a perspective held by certain individuals that the inclusion of additional skills in the higher education curriculum is devoid of purpose. Consequently, this viewpoint hinders universities from capitalizing on the advantages associated with engaging in partnerships with businesses to get a comprehensive understanding of and possibly address the evolving demands of the contemporary workforce.

A study was undertaken by the Malaysian Institute of Accountants (MIA) in 2020 to assess the use of technology in accounting courses. The survey garnered replies from a total of 73 academics, with 47 representing public institutions and 26 representing private universities. A significant proportion of participants (68%) identified a dearth of proficient professionals in new technologies as a hindrance to the integration of these technologies into the accounting curriculum, closely followed by a lack of comprehension of the aforementioned technologies (66%). All obstacles, with the exception of one, had ratings below 50%. Furthermore, the findings indicated that a significant proportion (40%) of the challenges encountered were attributed to the rigidity of the

accounting program requirements as reported by the Malaysian Institute of Accountants (MIA, 2020). One of the primary issues noted in the National Fourth Industrial Revolution (4IR) Policy (2019-2025) is the insufficient provision of education and upskilling courses pertaining to the 4IR. The aforementioned observation aligns with the outcomes of prior studies that highlighted the insufficiency of the accounting curriculum (Maali & Al-Attar, 2020; Osmani, Hindi, & Weerakkody, 2020). In their study, Maali and Al-Attar (2020) identified a notable discrepancy between the content of accounting courses offered in Jordanian universities, the competencies developed by students, and the demands and expectations of the job market. Ku Bahador, Haider, and Wan Mohd Saman (2018) have proposed that IT-related courses should be included in the curriculum for accounting students in order to foster IT proficiency, hence enhancing their effectiveness in the professional realm.

METHODOLOGY

Sample Study

This study chose accounting educators in the public and private universities in Malaysia. The selection of accounting educators is based on their active involvement in the curriculum design of accounting courses offered at institutions. Furthermore, this study also selected employers from several sectors since they are the entities responsible for hiring accounting graduates and hence likely to possess specific expectations about the competencies of these graduates. The accounting educators and employers were approached in June 2022, inviting them to participate in this study.

Research Instrument

This study used a quantitative research methodology. This study used a questionnaire survey as the primary research tool. The questions used in the questionnaire were derived from Parvaiz (2014). This study used two sets of questionnaires that were prepared specifically for the purpose of data collection. There exists a questionnaire designed specifically for accounting instructors to provide their responses, while another questionnaire is intended for employers to provide their responses. Both surveys consist of two parts.

The first component pertains to the demographic profile. In this part, accounting educators are required to respond to a set of inquiries pertaining to their demographic characteristics, including gender, age, years of teaching experience, and area of specialization in teaching. The employers are required to respond to a set of questions pertaining to their profile in the questionnaire. These questions include aspects such as gender, age, professional experience, and the nature of their company. The questions presented in Section 2 are identical for both sets of questionnaires. Within this particular area, participants are kindly asked to provide responses to a set of inquiries pertaining to general abilities associated with the concept of the expectation gap. These skills include decision-making, financial risk analysis, information technology proficiency, and critical thinking. This section includes a total of 33 general talents. Participants are kindly asked to reply to a set of inquiries using a 6-point rating system.

Data Collection and Analyses

The methodology used in this study included the dissemination of a questionnaire to accounting instructors at both public and private colleges, as well as employers across several sectors in Malaysia. The questionnaires were disseminated using a web-based survey platform, namely Google Form, and were thereafter shared with participants via electronic communication channels such as email, Whats App, and Telegram. The data collection period in this study was 6 months. A combined total of 209 surveys were collected, with 106 questionnaires completed and returned by accounting instructors and 103 questions completed and returned by employers.

After the data collection was completed, this study computed the average values of the various items using data derived from both real-life encounters and anticipated outcomes. This is to enable the researchers to compare the mean score of the items of skill attributes between the accounting educators and the employers.

RESULTS

Demographic Profile

The primary demographic characteristics of the participants were gender, age, professional experience, and highest level of education. The aforementioned items have been subjected to analysis using a category scale and are shown in **Table 2**. The table is partitioned into four distinct panels, specifically categorized as gender, age, employment experience, and highest education. As seen in **Table 2**, the majority of respondents who identified as

educators are female, accounting for 77.4% of the total. Conversely, there were only 24 male respondents, constituting 22.6% of the sample. In a similar vein, it is noteworthy that a majority of the respondents who represent employers are female, accounting for 55.3% of the total. Conversely, the remaining 44.7% of respondents are male, comprising a smaller proportion of the sample. This study reveals a larger representation of female accounting educators (82 or 58%) in comparison to their male counterparts. Furthermore, the proportion of female accounting educators (82 or 58%) exceeds that of female employers (57 or 42%). Contrarily, the data reveals a contrasting pattern among male respondents, with a higher proportion of employers (24 or 34%) compared to male instructors (46 or 66%).

In **Table 2**, it is evident that a majority of the respondents who are educators are aged above 40 years, constituting 77.3% (82 respondents) of the accounting educators. This is followed by 23 accounting educators, accounting for 21.7% of the respondents, who fall within the age range of 30 to 39 years. Additionally, there is one accounting educator respondent, representing 1% of the total respondents, who is between 20 and 29 years old. On the other hand, the responders representing employers show a contrasting pattern. The findings indicate that a majority of the respondents from the employer group are aged below 39, comprising 66 individuals or 64.1% of the total employer respondents. The subsequent group consists of 24 employers who are between the age range of 40 to 49 years old, accounting for 23.3% or 24 respondents. Subsequently, there are 13 employer respondents, or 12.6%, who are above the age of 50.

According to the data shown in **Table 2**, it can be seen that 41.5% of the respondents who are accounting educators possess a professional background exceeding 20 years of practical experience. The subsequent group of responders consists of accounting educators who possess a professional background ranging from 11 to 15 years of experience (19.8%), as well as those with 16 to 20 years of working experience (17.9%). Out of the accounting educator responders, the remaining 22 individuals possess fewer than 10 years of professional experience, accounting for 20.8% of the total. In Panel C of **Table 3**, it is evident that a majority of the respondents (51.5%) possess less than a decade of professional experience. Subsequently, the subsequent group of responses comprises those employed by organizations with 11 to 15 years of professional experience and 16 to 20 years of professional experience, accounting for an equal proportion of 18.4% each. Out of the whole sample of employer responders, including 12 individuals, it was found that 11.7% had a professional tenure exceeding 20 years. Additionally, **Table 2** presents the educational attainment of the participants. According to the data shown in **Table 2**, a significant majority of the accounting instructor respondents possess a Doctor of Philosophy (PhD) degree, accounting for 55.7% of the total. In contrast, a mere 2.9% of the employer respondents have a PhD. The findings further indicate that 42.4% of the respondents who are accounting educators own a master's degree, but among the employer respondents, 29.2% have a master's degree. Among the respondents who are accounting educators, a mere 2 individuals, or 1.9% of the total, own a bachelor's degree. In contrast, the majority of employer respondents, or 67.9% of the sample, have a bachelor's degree.

Table 2. Demographic Profile of Respondents

		Educators		Employers	
		N	%	N	%
Gender	Male	24	22.6	46	44.7
	Female	82	77.4	57	55.3
Age	20 – 29 years	1	1	37	35.9
	30 – 39 years	23	21.7	29	28.2
	40 – 49 years	42	39.6	24	23.3
	50 and above	40	37.7	13	12.6
Working experience	Less than 5 years	4	3.9	33	32.1
	6 to 10 years	18	16.9	20	19.4
	11 to 15 years	21	19.8	19	18.4
	16 to 20 years	19	17.9	19	18.4
	Above 20 years	44	41.5	12	11.7
Education	Bachelor	2	1.9	70	67.9
	Masters	45	42.4	30	29.2
	PhD	59	55.7	3	2.9

Educators' Expectations on Accounting Graduates' Skill Attributes

According to the data shown in **Table 3**, it can be seen that the mean scores for preferences exceeded 4.5. This indicates that both accounting instructor respondents and employer respondents had a strong inclination toward the variables. According to the accounting educators who participated in the survey, the concept of

"thinking and behaving ethically" was perceived as the most significant, as indicated by a mean score of 5.68. This was closely followed by the importance of "critical thinking," which received a mean score of 5.61. Additionally, the attributes of "reporting" and "being flexible and adaptable to changing environments and situations" were both considered highly important, with both receiving a mean score of 5.58. The aforementioned data indicate that accounting educators hold the belief that the ability to engage in critical thinking and exhibit ethical behavior is the most highly valued expectation for accounting graduates in their professional endeavors.

Table 3. Accounting Educators' and Employers' Expectations on Accounting Graduates' Skill Attributes

No	Generic Skill	Mean Educator	Mean Employer
1	Decision-making	4.94	4.77
2	Risk analysis	5.15	4.83
3	Reporting	5.58	4.78
4	Information technology competence	5.44	4.92
5	Critical thinking	5.61	5.11
6	International, industry and sector perspective	4.97	4.44
7	Legal regulatory perspective	4.84	4.43
8	Marketing/client focus	4.63	4.61
9	Problem-solving and decision-making	5.54	5.04
10	Leadership	5.12	4.94
11	Project Management	5.03	4.84
12	Think and behave ethically	5.68	5.12
13	Flexible and adaptable to changing environments and situations	5.58	4.95
14	Act strategically	5.42	5.01
15	Think and act independently	5.48	5.01
16	Focused on outcomes	5.31	4.84
17	Tolerate ambiguity	4.90	4.50
18	Think creativity	5.34	4.93
19	Listen effectively	5.50	5.15
20	Present, discuss and defend views	5.38	5.10
21	Transfer and receive knowledge	5.34	5.17
22	Negotiate with people from different	5.25	4.99
23	Understand group dynamics	5.24	5.12
24	Communicate in written format	5.46	5.05
25	Communicate orally	5.53	5.18
26	Engage in lifelong learning	5.48	5.09
27	Apply inter or multidisciplinary perspectives	5.19	4.64
28	Ability to collaborate with colleagues to resolve conflicts and work in team	5.38	5.07
29	The ability to analyse and reason logically	5.42	5.17
30	Personal attributes such as identifying strengths and weaknesses, motivation and confidence	5.42	5.16
31	Awareness of social and ethical	5.49	5.13
32	Work effectively in diversified cultural	5.26	5.14
33	Initiative	5.38	5.17

This study posits that acquiring the necessary abilities may be achieved by deliberate training and cultivating a heightened awareness of the significance of doing one's profession in an ethical manner. The cultivation of critical thinking skills among students may be facilitated within the classroom setting by the implementation of assignments and projects that encourage subjective analysis and open-ended debate. Simultaneously, it is crucial to instill in students a strong sense of ethical awareness and its significance. According to the accounting educators surveyed, there is a perceived need for graduates to possess the ability to adapt to dynamic environments and changing circumstances. Offering internships and industry training opportunities may provide students valuable exposure throughout their academic pursuits, therefore equipping them with a practical understanding of their future endeavors prior to graduation. The findings further indicate that proficiency in reporting is an essential ability for accounting graduates. Accounting graduates should possess the necessary skills to effectively generate financial reporting documents, such as the Statement of Profit and Loss and the Statement of Financial Position. This may evidently be accomplished via their process of acquiring knowledge.

According to the data shown in **Table 3**, it is evident that the employer respondents exhibit the highest average score in the domain of oral communication, with a mean score of 5.18. This discovery implies that

businesses exhibit a preference for students who possess strong communication skills, enabling them to effectively interact with their superiors, colleagues, and customers. The lack of good communication would lead to an incapacity to efficiently convey transactions or engage in activities. This conclusion aligns with the study conducted by Islam et al. (2015), which revealed that recent graduates place significance on the development of communication skills. This implies that the individuals' acquisition of experience via their employment has contributed to the improvement of their abilities in interpersonal communication. Accounting graduates see the experience as enhancing their communication skills. The employer assessed many competencies, including the ability to evaluate and reason rationally, convey and acquire information, and demonstrate initiative. All of these competencies received an average score of 5.17. The accounting educator respondents reported the lowest mean score of 4.68 for the category of "marketing/client focus." In contrast, the employer respondents offered the lowest mean score for the category of "legal regulatory perspective." These findings may be ascribed to features that are not inherently linked to the accounting discipline.

Table 4. T-Test Results on Expectation Gap in Accounting Graduates' Skill Attributes

No	Generic Skill	t	Mean Difference	p
1	Decision-making	1.360	0.176	0.175
2	Risk analysis	2.361	0.316	0.019
3	Reporting	6.265	0.799	0.0001
4	Information technology competence	4.317	0.521	0.0001
5	Critical thinking	4.100	0.506	0.0001
6	International, industry and sector perspective	3.950	0.535	0.0001
7	Legal regulatory perspective	3.132	0.412	0.002
8	Marketing/client focus	0.152	0.020	0.879
9	Problem-solving and decision-making	3.931	0.499	0.0001
10	Leadership	1.375	0.181	0.171
11	Project Management	1.391	0.184	0.166
12	Think and behave ethically	4.574	0.563	0.0001
13	Flexible and adaptable to changing environments and situations	4.967	0.624	0.0001
14	Act strategically	3.139	0.415	0.002
15	Think and act independently	3.581	0.471	0.0001
16	Focused on outcomes	3.655	0.467	0.0001
17	Tolerate ambiguity	2.479	0.391	0.014
18	Think creativity	3.089	0.408	0.002
19	Listen effectively	2.901	0.354	0.004
20	Present, discuss and defend views	2.223	0.280	0.027
21	Transfer and receive knowledge	1.384	0.175	0.168
22	Negotiate with people from different	2.055	0.264	0.041
23	Understand group dynamics	0.892	0.119	0.374
24	Communicate in written format	3.197	0.414	0.002
25	Communicate orally	2.864	0.344	0.005
26	Engage in lifelong learning	3.098	0.394	0.002
27	Apply inter or multidisciplinary perspectives	3.807	0.548	0.0001
28	Ability to collaborate with colleagues to resolve conflicts and work in team	2.350	0.309	0.020
29	The ability to analyse and reason logically	1.960	0.250	0.051
30	Personal attributes such as identifying strengths and weaknesses, motivation and confidence	2.114	0.269	0.036
31	Awareness of social and ethical	2.874	0.364	0.004
32	Work effectively in diversified cultural	0.937	0.128	0.350
33	Initiative	1.529	0.203	0.128

Table 4 shows that it is evident that among the 33 attributes examined in this study, a total of 24 attributes exhibit statistical significance. This observation substantiates the notion that there exists a significant disparity between the expectations of accounting educators and employers. Specifically, the expectations of accounting educators are found to be notably higher than those of employers. A total of nine traits have been identified as statistically unimportant, with these attributes often lacking direct relevance to recently graduated students. For instance, it is observed that accounting graduates at their current stage of professional development are not statistically anticipated to assume leadership roles ($p = 0.171$) or engage in decision-making processes ($p = 0.175879$). This study provides evidence of a significant expectation gap between the educator respondents and

the employer respondents, as shown by a p-value of 0.0001.

The calculation of the expected gap between the accounting educator respondents and the employer respondents on the qualities of accounting graduates is determined by computing the difference in means. The field of marketing and/or client focus has the least significant disparity in expectations, whereas reporting demonstrates the most substantial divergence in expectations. A T-test analysis was conducted on the variables. The findings of the T-test analysis are shown in **Table 4**. The aforementioned result suggests that the educators surveyed had a greater level of anticipation about the reporting abilities of accounting graduates in comparison to the employers surveyed. The data indicate that the educators surveyed anticipate that by graduation, students would possess the necessary abilities to effectively write reports. Nevertheless, it is often observed that employers frequently do not have the expectation that accounting graduates have proficiency in reporting, given their recent completion of academic studies. Instead, employers typically anticipate that such abilities would be acquired via practical experience in the field.

DISCUSSION

A comprehensive examination of existing scholarly works reveals that prior studies have consistently shown that the expectations held by educators and/or students tend to be lower in comparison to those held by employers (Tan & Laswad, 2018; Succi & Canovi, 2019; Bridgstock & Jackson, 2019; Pham & Jackson, 2020). Consequently, academic institutions have made efforts to augment the curriculum with the aim of enhancing the knowledge and skills of accounting graduates. Nevertheless, the results of this study were somewhat surprising, since it was shown that accounting instructors had greater expectations for the skill qualities of accounting graduates compared to employers. Accounting degrees offered by universities and colleges often strive to provide a complete educational experience that covers a wide range of accounting concepts, practices, and theories. This may include several areas of study such as financial and management accounting, auditing, taxes, and information systems. The study's results indicate that the curriculum's breadth and depth may surpass the precise demands of employers, leading to elevated educational expectations.

It is understandable that the field of accounting undergoes constant evolution as a result of technical advancements, regulatory modifications, and the emergence of new financial practices. Educational institutions often strive to remain abreast of these advancements, leading to the implementation of a comprehensive curriculum that spans a diverse range of courses. The field of accounting is subject to the impact of dynamic market trends and improvements in technology. In order to adequately equip students for the evolving needs of the business, educational institutions have the option to include developing subjects such as data analytics, digital accounting technologies, and forensic accounting into their curricula. Nevertheless, it is possible that businesses may not have an urgent need for these specific abilities, leading to a discrepancy between the education received by individuals and the expectations of employers. Employers may not necessarily want the whole of the skills and information imparted via these educational courses, leading to a perceived discrepancy between the qualifications attained and the work prerequisites. Furthermore, it is important to note that several accounting occupations need the possession of credentials such as Certified Public Accountant (CPA) or Chartered Accountant (CA). Generally, these certificates are characterized by rigorous educational and test prerequisites that may be beyond the expectations of some companies. Universities have the authority to tailor their accounting courses in accordance with the conditions for these certificates, even if such requirements are beyond the expectations set by employers.

This study further posits that institutions that provide accounting degrees often engage in competition with one another, with the perceived excellence of their courses serving as a key determinant. In order to enhance student enrollment and maintain a competitive advantage, educational institutions may choose to include supplementary academic modules, internships, or experiential learning components inside their established curriculum. Although these additional components have the potential to enrich a student's educational experience, they may not always exactly correspond with the precise employment prerequisites required by employers. In addition, accounting curricula often prioritize the cultivation of diverse talents that extend beyond just technical expertise in accounting. These talents include critical thinking, problem-solving, communication, and collaboration abilities. Although companies do see the importance of these talents, they may not expressly emphasize them in their job postings or weigh them as strongly as the fundamental accounting skills when assessing applicants.

Furthermore, accounting curricula often emphasize the cultivation of transferable skills such as critical thinking, problem-solving, communication, and cooperation. Despite the great importance placed on these talents, employers may not expressly prioritize them in job descriptions or assign them as much weight as technical

accounting expertise when assessing applicants. Employers may impose a heightened educational threshold in order to effectively screen out ineligible individuals and thus streamline the pool of applicants. By implementing more stringent criteria, employers have the potential to attract a more competitive pool of applicants and enhance their likelihood of identifying extraordinary talent. Employers retain the ability to discern highly qualified individuals throughout the recruitment process, even in cases when not all applicants exhibit the whole set of skills and knowledge required by the degree. It is crucial to acknowledge that the following remarks are of a general nature and may not be universally applicable to all employers or accounting positions. The expectations of employers might exhibit significant variation depending on job-specific prerequisites, sector, firm size, and other pertinent factors. It is highly recommended that those who are seeking a degree in accounting do thorough research and have a comprehensive understanding of the unique needs and expectations set by potential employers.

CONCLUSION

The objective of this study is to analyze the anticipated skill qualities of accounting graduates as seen by accounting instructors and employers within the context of the Industrial 4.0 environment. This study demonstrates a notable disparity in the expectations of accounting instructors and employers with regard to the skill qualities of accounting graduates, as shown by a questionnaire survey conducted among 209 participants from these respective groups. This study aimed to identify 33 traits that may be used to assess the existence of an expectation gap in the skill attributes of accounting graduates, as seen by accounting instructors and employers. Among the 33 skill qualities that have been found, a total of 24 exhibit notable gaps as shown in Table 5. These disparities include many areas such as risk analysis, financial analysis, and communication. The characteristic of information technology proficiency is a crucial one that exhibits notable disparities between accounting education and employers.

Undoubtedly, within the context of Industry 4.0, it is essential for accounting graduates to possess this particular ability. Nevertheless, as previously said, it is possible that employers may not have high expectations about the level of proficiency in computer technology among accounting graduates. This study also examined the implications of these gaps and explored potential explanations for their existence.

This study is not without limitations. The data in this study were obtained at a singular time point, hence allowing room for conjecture and impeding the researchers' ability to establish a causal relationship between variables. According to Islam et al. (2015), longitudinal studies are the most suitable method for effectively distinguishing between cause and effect. Furthermore, the data used in this study was obtained from a diverse range of sources, including both public and private colleges, as well as employers in Malaysia. However, the study's sample size was limited to just 209 respondents, perhaps limiting the generalizability of its findings. Therefore, future study endeavors may benefit from using a more extensive sample size. Furthermore, after an extensive examination of the existing scholarly works, this study made use of a total of 33 talent qualities. Future studies have the potential to include a wide range of other features.

Table 5. Expectation Gap in Accounting Graduates' Skill Attributes

No	Generic Skill	t	Mean Difference	p
1	Risk analysis	2.361	0.316	0.019
2	Reporting	6.265	0.799	0.0001
3	Information technology competence	4.317	0.521	0.0001
4	Critical thinking	4.100	0.506	0.0001
5	International, industry and sector perspective	3.950	0.535	0.0001
6	Legal regulatory perspective	3.132	0.412	0.002
7	Problem-solving and decision-making	3.931	0.499	0.0001
8	Think and behave ethically	4.574	0.563	0.0001
9	Flexible and adaptable to changing environments and situations	4.967	0.624	0.0001
10	Act strategically	3.139	0.415	0.002
11	Think and act independently	3.581	0.471	0.0001
12	Focused on outcomes	3.655	0.467	0.0001
13	Tolerate ambiguity	2.479	0.391	0.014
14	Think creativity	3.089	0.408	0.002
15	Listen effectively	2.901	0.354	0.004
16	Present, discuss and defend views	2.223	0.280	0.027
17	Negotiate with people from different	2.055	0.264	0.041

No	Generic Skill	t	Mean Difference	p
18	Communicate in written format	3.197	0.414	0.002
19	Communicate orally	2.864	0.344	0.005
20	Engage in lifelong learning	3.098	0.394	0.002
21	Apply inter or multidisciplinary perspectives	3.807	0.548	0.0001
22	Ability to collaborate with colleagues to resolve conflicts and work in team	2.350	0.309	0.020
23	Personal attributes such as identifying strengths and weaknesses, motivation and confidence	2.114	0.269	0.036
24	Awareness of social and ethical	2.874	0.364	0.004

In summary, this study's results provide valuable insights into the anticipated skill qualities of accounting graduates as perceived by accounting professors and employers. In the context of Industry 4.0, it is essential for universities to develop and execute programs that are in accordance with the missions and goals of the government, with the aim of cultivating a workforce that fulfills the demands of employers. To effectively achieve the missions and goals at hand, it is imperative for universities to enhance their understanding of the skill prerequisites set by employers. This will enable accounting graduates to more effectively meet these criteria, as well as fulfil the essential overarching educational objectives associated with obtaining a university degree.

REFERENCES

- Adhariani, D. (2020). Students' perceptions and employers' expectations regarding the skills and knowledge of accounting graduates. *PalArch's Journal of Archaeology Egypt/Egyptology*, 17(7), 9245-9258.
- Ahadiat, N., & Smith, K. J. (1994). A factor-analytic investigation of employee selection factors of significance to recruiters of entry-level accountants. *Issues in Accounting Education*, 9(1), 59-79.
- AICPA. (2018). The AICPA pre-certification core competency framework. Retrieved from <https://us.aicpa.org/content/dam/aicpa/interestareas/accountingeducation/resources/downloadabledocuments/aicpa-pre-certification-core-compentency-framework.pdf>
- Akbulaev, N., Mammadov, I., & Shahbazli, S. (2021). Accounting education in the universities and structuring according to the expectations of the business world. *Universal Journal of Accounting and Finance*, 9(1), 130-237.
- Azhar, Z., Jalaludin, D., Ghani, E. K., Ramayah, T., & Nelson, S. P. (2023). Learning agility quotient and work readiness of graduating accounting students: Embracing the dynamics of IR4.0. *Accounting Education*, 1-23. doi:10.1080/09639284.2023.2211567
- Blasi, J. R., Freeman, R. B., & Kruse, D. L. (2013). *The citizen's share: Putting ownership back into democracy*. New Haven, CT: Yale University Press.
- Bonekamp, L., & Sure, M. (2015). Consequences of industry 4.0 on human labour and work organisation. *Journal of Business and Media Psychology*, 6(1), 33-40.
- Bridgstock, R., & Jackson, D. (2019). Strategic institutional approaches to graduate employability: Navigating meanings, measurement s and what really matters. *Journal of Higher Education Policy and Management*, 41(2), 1-17.
- Burritt, R., & Christ, K. (2016). Industry 4.0 and environmental accounting: A new revolution?. *Asian Journal of Sustainability and Social Responsibility*, 1(1), 23-38.
- CSAP. (2014). Report on the strengthening of the accountancy profession in Malaysia. Retrieved from <https://www.facebook.com/miamainpage/photos/pcb.889544914389681/889544774389695>
- Davies, R. (2015). Industry 4.0: Digitalisation for productivity and growth, EPRS: European Parliamentary Research Service. Retrieved from <https://policycommons.net/artifacts/1335939/industry-40/1942749>
- de Grip, A., van Loo, J., & Sanders, J. (2004). The industry employability index: Taking account of supply and demand characteristics. *Intematonal Labour Review*, 143, 211.
- Frankham, J. (2017). Employability and higher education: The follies of the 'productivity challenge' in the teaching excellence framework. *Journal of Education Policy*, 32(5), 628-641.
- Frey, C. B., & Osborne, M. A. (2013). The future of employment: How susceptible are jobs to computerisation?. Retrieved from http://www.gatsby.ucl.ac.uk/tea/tea_archive/attached_files/the_future_of_employment_paper.pdf
- Ghani, E. K., & Muhammad, K. (2019). Industry 4.0: Employers' expectations on accounting graduates and its implications on teaching and learning practices. *International Journal of Education and Practice*, 7(1), 19-29.
- Ghani, I. A. G. A. A. (2020). Employers' expectation and preference of graduates in Malaysia. *Journal of Human Capital Development (JHCD)*, 13(2), 37-60.
- Harvey, L. (2004). *On employability*. The Higher Education Academy. Available at http://www.heacademy.co.uk/embedded_object.asp?id=21673&filename=Harvey.
- Harvey, L., & Mason, S. (2013). A quality graduate. In *Management of Independent Learning Systems* (pp. 13-28). Abingdon, UK: Routledge.
- Hassall, T., Joyce, J., Montanto, J., & Anes, J. (2005). Priorities for the development of vocational skills in management accountants: A European perspective, *accounting forum*, 29(4), 379-394.
- Herbert, I., Rothwell, A., Glover, J., & Lambert, S. (2020). Graduate employability, employment prospects and work readiness in the changing field of professional work. *The International Journal of Management Education*, 18(2), 100378.
- Hillage, J., & Pollard, E. (1998). Employability: Developing a framework for policy analysis. Retrieved from https://www.academia.edu/23029127/Employability_developing_a_framework_for_policy_analysis

- Islam, T., Ahmed, I., Khalifah, Z., Saddiq, M., & Faheem, M. A. (2015). Graduates' expectation gap: The role of employers and higher Learning Institutes. *Journal of Applied Research in Higher Education*, 7(2), 372-384.
- Jabbar, N., & Madhoshi, M. (2014). Factors affecting knowledge sharing behaviour in academic communities: Grounded theory. *International Journal of Education and Practice*, 2(6), 126-136.
- Jarosz, S., Soltysik, M., & Zakrzewska, M. (2020). The fourth industrial revolution in the light of social and competence changes. *European Research Studies Journal*, 530-548.
- Karatas, H., Bademicioglu, M., & Celik, S. (2017). A study on the relationship between problem solving skills and multiple intelligences of high school students. *International Journal of Education and Practice*, 5(10), 171-181.
- Kim, T. S., Ghosh, B. C., & Meng, L. A. (1993). Selection criteria: Perception gap between employers and accounting graduates. *Singapore Accountant*, 9(4), 32-33.
- Ku Bahador, K. M., Haider, A., & Wan Mohd Saman, W. S. (2018). Assessing information technology skills using maturity scale approach: A case of Malaysian accounting firms. *Journal of Engineering and Applied Sciences*, 13(4), 954-960.
- Lees, D. (2002). *Graduate employability – Literature review*. Retrieved from <http://qualityresearchinternational.com/eseetools/eseetpubs/leeslitreview.pdf>
- Liu, Y., & Xu, X. (2017). Industry 4.0 and cloud manufacturing: A comparative analysis. *Journal of Manufacturing Science and Engineering*, 139(3), 034701.
- Maali, B., & Al-Attar, A. M. (2020). Accounting curricula in universities and market needs: The Jordanian case. *SAGE Open*, 10(1). <https://doi.org/10.1177/2158244019899463>
- Mason, G., Williams, G., & Cranmer, S. (2009). Employability skills initiatives in higher education: what effects do they have on graduate labour market outcomes?. *Education Economics*, 17(1), 1-30.
- McMurray, S., Dutton, M., McQuaid, R., & Richard, A. (2016). Employer demands from business graduates. *Education+ Training*, 58(1), 112-132.
- MIA., & ACCA. (2020). *The Outlook of the Accountancy Profession in Malaysia*. Retrieved from https://mia.org.my/wp-content/uploads/2022/04/MIA-ACCA_Business_Outlook_Report_2020.pdf
- Morshidi, S., Chan, L. H., Munir, S., Shukran, A. R., Seri Rahayu, A. K., Kaur, J., & Singh, N. (2012). Employability of graduates in Malaysia. In *Graduate employability in Asia* (pp. 24-37). Bangkok, Thailand: UNESCO Bangkok.
- Ngoo, Y., Tiong, K. M., & Pok, W. F. (2015). Bridging the gap of perceived skills between employers and accounting graduates in Malaysia. *American Journal of Economics*, 5(2), 98-104.
- Omar, S. A., & Hasbolah, F. (2018). *Awareness and perception of accounting students towards industrial revolution 4.0*. In *5th International Conference on Accounting Studies (ICAS 2018)* (pp. 1-7). Retrieved from <https://repo.uum.edu.my/id/eprint/26062/>
- Osmani, M., & Hindi, N., Weerakkody, V. (2020). Incorporating information communication technology skills in accounting education. *International Journal of Information and Communication Technology Education*, 16(4), 100-110.
- Parvaiz, G. (2014). *Skills expectation-performance gap: A study of Pakistan's accounting education* (Doctoral dissertation, Brunel University, London, UK). Retrieved from <https://bura.brunel.ac.uk/handle/2438/8768>
- Pham, T., & Jackson, D. (2020), *The need to develop employability for a globalized world, In Developing and Utilising Employability Capitals – Graduates' Strategies across Labour Markets*. Routledge. UK
- Robinson, J. P. (2000). What are employability skills. *The workplace*, 1(3), 1-3.
- Schulz, B. (2008). The importance of soft skills: Education beyond academic knowledge. *Journal of Language and Communication*, 2, 146-154.
- Schuster, K., Plumanns, L., Groß, K., Vossen, R., Richert, A., & Jeschke, S. (2015). Preparing for Industry 4.0 – Testing collaborative virtual learning environments with students and professional trainers. *International journal of advanced corporate learning*, 8(4), 14.
- Shafie, L. A., & Nayan, S. (2010). Employability awareness among Malaysian undergraduates. *International Journal of Business and Management*, 5(1), 119-129.
- Simons, K., Higgins, M., & Lowe, D. (1995). A profile of communication apprehension in accounting majors: Implication for teaching and curriculum revision. *Journal of Accounting Education*, 13(Spring), 159-176.

- Singh, P., Thambusamy, R., & Ramly, M. D. (2014). Assessing graduates' generic skills: An indicator of employability. *Pertanika Journal of Social Science and Humanities, 22*(3), 845-860.
- Stiwne, E. E., & Alves, M. G. (2010). Higher education and employability of graduates: Will Bologna make a difference?. *European Educational Research Journal, 9*(1), 32-45.
- Succi, C., & Canovi, M. (2019). Soft skills to enhance graduate employability: Comparing students and employers' perceptions. *Studies in Higher Education, 45*(9), 1834-1847.
- Suleman, F. (2018). The employability skills of higher education graduates: Insights into conceptual frameworks and methodological options. *Higher Education, 76*(2), 263-278.
- Tan, L. M., & Laswad, F. (2018). Professional skills required of accountants: What do job advertisements tell us?. *Accounting Education, 27*(4), 403-432.
- Tsiligiris, V., & Bowyer, D. (2021). Exploring the impact of 4IR on skills and personal qualities for future accountants: A proposed conceptual framework for university accounting education. *Accounting Education, 30*(6), 621-649.
- Wilkinson, A., Hislop, D., & Coupland, C. (2016). *Perspectives on contemporary professional work: Challenges and Experiences*. Cheltenham, UK: Edward Elgar Publishing.