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INDUSTRY 4.0: EMPLOYERS' EXPECTATIONS OF ACCOUNTING GRADUATES AND ITS IMPLICATIONS ON TEACHING AND LEARNING PRACTICES

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ABSTRACT

This study aims to examine employers' expectations of knowledge and skills in accounting graduates before hiring them. Using a qualitative approach on accounting practitioners and academics, this study shows that the expectations employers place on accounting students in the Industry 4.0 environment is set to change significantly, particularly in technologies used in the preparation, reporting and dissemination of financial information. Specifically, this study showcases the strong views expressed by a panel of experts comprising accounting practitioners, particularly on the subjects of job redundancies and the degree of replacement of human activities by electronic devices and machines. The replacement of physical human activities by machines is therefore expected. In addition, accounting practitioners see the need for accounting graduates to focus on continuous learning and education, particularly in acquiring knowledge and skills in IT. Hence, there is a need for academics and universities to incorporate various accounting technologies and simulations that are applicable to the Industry 4.0 environment, in their teaching and learning activities. This study contributes to existing education literature by providing new findings on the expectations of employers of future accounting graduates. In addition, this study contributes to the further understanding of academics and universities in strategizing ways and innovating new teaching and learning approaches so that accounting graduates' employability can be enhanced and the needs of the current market for accountants can be accommodated.

Contribution/Originality: This study is the first to provide findings on the expectations of employers of future accounting graduates in the era of Industry 4.0 in a Malaysian context.

1. INTRODUCTION

The rapid advancement of smart technologies has led to the evolution of Industry 4.0. Industry 4.0 involves the 'internet of things' that is expected to provide a huge availability of information with seamless interconnectivity (Kagermann, 2014; Bonekamp and Sure, 2015). It provides an approach in which humans, information and communication technologies grow more closely together (Gabriel and Pessl, 2016; Zheng *et al.*, 2018). Industry 4.0 first began in Germany and was subsequently followed by other countries such as the US, Japan, and China. However, it is anticipated that Industry 4.0 would lead to a huge reduction in human intensive labour, which may in turn cause high unemployment rates particularly among graduates throughout the world (Baygin *et al.*, 2016). This is because the Industry 4.0 environment would tend to eliminate routine jobs and focus more on highly skilled

jobs (Brynjolfsson and Mcafee, 2014). Of consequence, Industry 4.0 would revolutionize the industries (Gabriel and Pessl, 2016) so much that the jobs which exist today would no longer exist in 50 years' time.

The World Economic Forum anticipates that Industry 4.0 would likely lead to a net loss of over 5 million jobs in 15 major developed and developing countries (Cann, 2016) and Malaysia is not an exception in this scenario. Of consequence is a situation whereby the Malaysian government may have to cope with growing unemployment and inequality in income, coupled with the shrinking of consumer-based businesses. The ones that would be affected most in the Industry 4.0 environment would be the middle skill jobs (Brown-Martin, 2017). The knowledge that most undergraduate accounting students will be employed in middle skill jobs raises the concern of whether these graduates will be able to secure jobs upon graduation. Therefore, to ensure graduates' employability, the teaching and learning activities of accounting students need to be tailored to suit employers' expectations of accounting graduates in the Industry 4.0 environment (Mohd *et al.*, 2009; Bonekamp and Sure, 2015). Consequently, in view of future employment domains, accounting students need to be prepared to meet the demands of Industry 4.0.

This study aims to examine employers' expectations of e knowledge and skills possessed by accounting graduates before hiring them. In addition, this study also examines the teaching and learning activities practised in getting accounting graduates ready for Industry 4.0. The findings of this study provide valuable information to universities and academics in strategizing ways and innovating new teaching and learning approaches so that the graduates' employability can be enhanced and the expectations of the current market for accountants can be accommodated. The remainder of this paper is structured as follows: Section 2 provides a review of relevant literature whilst Section 3 outlines the research design. The findings are presented in section 4. The last section, Section 5, provides the conclusions of this study.

2. LITERATURE REVIEW

Industry 4.0 is defined as the new era that builds and extends the impact of digitalisation in new and unanticipated ways; that can also be described as the advent of "cyber-physical systems" involving entirely new capabilities and connectivity for people and machines (Davis, 2015; Liu and Xu, 2017). It is expected that this era will affect job susceptibility (Frey and Osborne, 2013) particularly among graduates. Jobs previously performed by humans will largely be replaced by computerisation (Blasi *et al.*, 2013). Frey and Osborne (2013) in their study found that slightly less than half of the jobs in the US are exposed to the risk of becoming redundant due to Industry 4.0 as robots can perform not only routine tasks but also sophisticated tasks beyond the routine. Their findings implied that although Industry 4.0 provides opportunities for those who are prepared to embrace it, this era also poses great challenges to traditional professions; the accounting profession is no exception.

In the accounting profession, accountants can prepare for the new era by increasing awareness, building knowledge through professional development and continuous education, encouraging skill development in new entrants and collaborating with other professionals (Cann, 2016). Accounting for integration of systems in Industry 4.0 will likely be at a premium and engagements with local accounting issues in the business environment will be at high levels of connectivity (Kagermann, 2014). Industry 4.0 is expected to influence accounting practices since the accountants can obtain previously unobtainable data in real time, raise data quality through greater accuracy and timeliness in improving data efficiency and data assurance as well as other decision-making purposes (Hart, 2017). In addition, this era is expected to increase the credibility and relevance of reporting (Burritt and Christ, 2016). In sum, accountants will have the opportunity to be less involved with automated operations and focus more on big-picture strategies such as resource efficiency. However, accountants need to well versed in the new technologies in order to remain in strong demand.

For new entrants to the accounting profession, professional bodies can assist academics and universities in the provision of curricula relevant to graduates who may need to struggle with the era of Industry 4.0 as it involves new digital connectivity. Often, academics and universities respond by way of modifications to existing course

contents or introduction of new courses and teaching methods to cope with the new environment (Jabbary and Madhoshi, 2014). Such actions are intended to enhance the employability of their graduates. This might be through investment in technology for practical experience and providing experience with role play in Industry 4.0 scenarios (Mason *et al*., 2006). Thus, working with professional bodies and accountants can help academics and universities in making suitable courses available for accounting graduates to be relevant in the era of Industry 4.0. As such, accounting graduates should be trained in universities to become qualified employees who can cope with the preparations for facing Industry 4.0 (Bonekamp and Sure, 2015).

Portfolios in the educational technologies have become more diverse than before as various types of software are now available to assist academics in making the teaching and learning experiences more effective. The digitalization of education has further provided more alternatives to academics in their teaching and learning methods (Schuster *et al*., 2015). Arguably, this provides opportunities for the academics in strategizing ways to disseminate their knowledge to students, in ways that are relevant and practical, so that graduates will be able to adapt and stay in demand in the real world (Karatas *et al*., 2017). However, teaching and learning processes can only be effective when the academics and universities know the expectations of the employers of the accounting graduates in the era of Industry 4.0.

3. RESEARCH DESIGN

3.1. Participants

Accounting practitioners and accounting academics have been chosen as participants in this study. Specifically, an accountant, an auditor and two accounting academics from a public university participated in this study. In this study, the accountant is known as Mr A whilst the auditor is known as Mr C and they are both above 40 years old. The accountant is currently attached to a public listed company whilst the auditor owns an audit firm. The accountant and the auditor are chosen since they have more than 20 years of related work experience. Therefore, these two practitioners were deemed suitable to provide different perspectives on employers' expectations of accounting graduates.

The academics on the other hand, were chosen due to their experience in both practice and in e teaching the accounting discipline. The academics are both males and above 40 years old. The academics are known as Dr B and Dr D respectively. All the participants are aware of the idiosyncrasies of Industry 4.0. The participants were contacted based on personal knowledge and their vast experience in practice as well as in the teaching field.

3.2. Research Instrument

This study relies on a qualitative research approach, namely interviews, to achieve its research objectives. The interviews were held on a semi-structured survey basis in order to have a problem-focused approach, thereby allowing more personalized discussion to be conducted together with the survey. In this way, this study aimed to obtain detailed subjective views and information on the research topic from the participants (Mayring, 2010).

The questionnaire was developed on the basis of this study; it was discussed and refined in a discussion with a panel of academics experienced in educational accounting. It consists of four sections, namely personal questions about the participants, on Industry 4.0 in general, on the challenges faced by Industry 4.0 and on the preparations to meet the challenges of Industry 4.0.

3.3. Data Collection and Data Analysis

The questionnaires were sent to the participants prior to the interviews in order for them to be better prepared for the discussion process. The first interview was conducted with the accountant, followed by the second interview with the auditor to determine their expectations of the accounting graduates in the era of Industry 4.0.

Subsequently, interviews were conducted with the academics. This was done to enable the researchers to inform the academics of the expectations of the accountant and auditor and identify ways to fulfil such expectations.

Upon completion of the data collection, the interviews were recorded and subsequently transcribed. Further to the transcription, the text results were structured and categorized according to major themes, followed by a specific coding. The coding process resulted in a category system, which subsequently was used to structure and guide the information data evaluation process.

4. FINDINGS

The coding analysis that results in a category system provides five main themes: time horizon until comprehensive, modification of work environment, modification of job profiles, change measures and social consequences. These themes are similar to the themes provided in Bonekamp and Sure (2015).

4.1. Time Horizon until Comprehensive

The experts interviewed shared the view that it may take decades rather than years before Industry 4.0 technology fully evolves among the companies in Malaysia. The participants opined that the change would be more of an evolutionary change rather than a revolutionary change. They both agreed that the nature of work in auditing would gradually change and their job scopes would involve the use of technologies. As noted by auditor, Mr C:

> *The change in the way audit work is conducted changes slowly. In the past, most audit work was done manually, now several step audits have been implemented with the use of computers (Evolutionary). For example, sample selection is made with the help of the system. Similar to accounting, pre-account preparation was conducted manually, using ledger books, and cashbooks known as primary books of accounts. Now the use of accounting software has replaced the use of the primary book of accounting.*

In addition, the future landscape of the accounting and business environment remains uncertain due to the constant evolution of the computer and technologies. Mr C provided his opinion:

> *Generally, the change in computer and technology takes place every 1.5 to 2 years. Change by turn, version by version, is generated to make the world more modern and sophisticated. Similarly in accounting and auditing. Previously there was no accounting software but now we have accounting software. Previously there was no software audit but now there is accounting software. Changes are happening today; some time back we thought it was not l possible. For example, at the time I first started as auditor, there was no system called audit software as the ones used today. But now, after 20 years of auditing, there is ExP Audit, Audit Common language (ACL) which is a software audit that is continuously upgraded from time to time.*

Mr A, the accountant noted:

> *Similarly, in accounting, it was previously not possible for overseas companies stationed abroad to provide our companies account preparation services in Malaysia. Now there are companies in India providing our companies accounting preparation services in Malaysia. Documents are transmitted virtually to enable account creation. Therefore, we do not know how things will turn out in the future. Maybe the auditing jobs may not require human service. Maybe machines and software will replace humans.*

4.2. Modification of Work Environment

In terms of modification of the work environment, the participants agreed that simple, highly standardized human activities such as the preparation of accounts which used to be done manually would be eliminated and replaced by computerized systems. Thus, there is an agreement that Industry 4.0 technologies would not only eliminate jobs but also create new ones. The participants are also in accord with their views that due to the introduction of Industry 4.0 computerized systems, activities will become more transparent for managements to

monitor although they would pose challenges to accounting graduates in terms of their ability to apply and utilise the Industry 4.0 computerised systems. Mr A commented:

> *Repeated and recurring processes are also replaced with systems that calculate or run a manual accounting process. For example, the provision of Bank Reconciliation initially used the manual Microsoft excel progrmme, but now use software embedded in the accounting system. Similarly with calculations on monthly depreciation the system automatically calculates the amount of depreciation of each asset every month. The only thing that needs to be included in the system is information related to the asset, such as its useful life, depreciation method…*

The panel of experts from the academics stated their awareness of the degree of replacement of human activities by electronic devices and machines and the replacement of physical human activities by machines. The academics opined that they themselves realised the changes in the nature of their jobs, which is moving towards IT technologies. Consequently, this scenario has directed the accounting graduates towards the use of IT rather than relying on traditional modes of teaching and learning. Dr D noted that:

> *In the teaching process for example, college notes can be uploaded to a system like MOOC, a website which does not require lecturers to photocopy the notes anymore. In this way IT students can access the internet and students are not burdened with carrying large bags loaded with heavy reading material. The search for information will also be faster by typing related keywords into the system. Lecturers also do not need to bring notes on paper and books to class thumb drives will suffice. More importantly, the search process is faster too, for example finding information on MFRS 13 Fair Value measurement. With the softcopy of financial statements of public listed companies (available on Bursa Malaysia's website), lecturers share with students how the use of level 3 inputs measure fair value. To record and analyse student attendance, for example, lecturers can use the Scan Attendance Manager (SAM) where this software allows lecturers to record and analyse student attendance without requiring lecturers to bring attendance lists to the class. In the process of research, for example, the questionnaires survey transmission process can be done using "Google form" where the researcher no longer needs to be in the post office to post the questionnaires one by one, physically. Simply by posting the questionnaires through Whatsapp group, Facebook, email, or twitter account, the researcher gains access to the respondent. Respondents can send immediate answers and Google form can proceed to make data analysis.*

In a certain way, the expert concluded that Industry 4.0 technologies would also enhance the process performance traceability, thus, making the work process more flexible. The process of information search would become much easier with the availability of the systems. The participants agree on the fact that the systems would ease their burden in finding information without much hassle. As noted by Mr A:

> *Now, the process of finding information is easier and faster with the help of the system. For example, if I want to know the name of the supplier of furniture to the company with one click on the relevant transaction, information about the supplier is known. With the system, it does not require for us to go down to the store that holds the supplier's invoice. This helps save a lot of time.*

Mr A also noted:

> *With IT, work can be done in a more flexible manner, where there is no designated work station for the workers, for example the Digi Malaysia office. Employees can work from anywhere such as a café, as long as the computer and internet are available. Work can also be done from the home. Another example is that there is no specific working station. Therefore those who come to work late will have to use the working station near the boss. This indirectly encourages workers to be punctual.*

The panel of experts from the practitioners are in agreement that Industry 4.0 requires accounting graduates to focus more on IT capabilities. This is because many jobs in the era of Industry 4.0 currently performed by humans will be replaced by IT hardware and software. Of consequence is the fact that this would generate close cooperation between workers and machines. This indicates that accounting graduates need to be IT savvy in order to be relevant and sustain their demand. Mr A provided his opinion:

> *In this era, the work that was previously done by humans and paper reports can now be done with IT for example, a monthly management report relating to company performance. Previously, the report would be printed and presented physically during management meetings. With the system, for example, Online KPI reporting is used by many companies. Monthly reporting will be made virtual, online and plausible scenarios can be made easily. It will help to make decisions faster and more accurately.*

The panel of experts from the academics are aware of the IT requirements in the era of Industry 4.0. The academics have started to implement or use various strategies related to IT in their teaching and learning processes so that the accounting graduates will be able to equip themselves with a variety of IT skills. This will provide the accounting graduates the advantage of securing jobs. Dr B explained:

> *Now, staffs need to be more responsive to existing systems. The use of this wide range of systems will make it easier to work and more importantly will result in more effective output. For example, in the teaching of accounting subjects today, various programs on the internet can help lecturers in teaching and learning processes. An example can be used for a quiz. This program not only provides students with a quicker assessment method but also attracts students of Y genes that are more likely to be and are interested in IT and gadgets. To overcome the damage of the LCD in the classroom for example, software such as "Nearpod" or "MirrorOp" can be used as a replacement for the LCD.*

Dr D supports Dr B's view:

> *Again, to encourage active students in the classroom, we can use the "ClassDojo" software where it can help encourage students to be active in the classroom. The criteria of student engagement, can be set according to the Nine Soft Skills (KIs) outlined by the Ministry of Education. Different scores can be given for each different KI, for example, an out-of-box question for KI criteria "Outside thinking". With this, a lecturer needs to have a variety of IT skills and be IT savvy in order to adapt and use IT to assist him in the teaching and learning process.*

In terms of new relationships between planning and execution of tasks, with IT technologies in Industry 4.0, the panel of experts from the auditors acknowledge the fact that IT technologies will be able to make planning more effective and efficient. Hence, this provides an indication for the need among accounting graduates to be technology savvy. As noted by Mr A:

> *With IT, monitoring of each planning is made easier and more effective. And most importantly, in the event of a deviation from what we have planned, immediate corrective action can be taken. As an example, system business planning and consolidation (BPC) used by a number of large companies is able to provide automated, systematic and rapid bug fixes. In addition, process monitoring can be carried out more effectively, where variance analysis as an example can be done with the help of this BPC. Then corrective action can be taken where BPC proposes certain tactical actions. In the construction industry for example, various systems in the market l help process planning for construction (timeline and deliverables). Then, during the process of execution, comparison with the planning l provides information on whether each project is behind, ahead or at par compared with the planning. With this corrective action (if necessary) is possible.*

4.3. Modification of Job Profiles

The era of Industry 4.0 has also led to the modification of job profiles. Previously, auditors were required to conduct their auditing work manually, where they had to bring their files to their audit centres. However, with Industry 4.0, auditors no longer need to bring their files along; they can just bring their laptops to the audit centres. Mr C opined:

> *The use of computers is becoming more and more important in this IT era. For example, once an auditor needed a large file box and bag to bring the files upstream and downstream. Now, the auditors only need laptops to replace box files and there is no need for big bags. Further, auditors' work is normally reviewed by the supervisor, manager and audit partner. Now, this review work can be done virtually and timely feedback can be obtained. Audit working files provided by the auditors can be viewed by supervisors and other reviewers online without meeting in person. From the client office, the auditor can email the reviewer for reviews without the need for the auditor to return to the office. Similarly, responses to the review notes and necessary attention by the reviewer can be resolved from the home, client office or other suitable venues without the need for face-to-face meetings in the office.*

Mr A has provided further explanation:

> *Every employee should always learn to ensure that the development of a new system that facilitates many work processes can be fully utilized. For example, in the process of learning and teaching, new programs help to facilitate the teaching process. Similarly, mastering some of the good systems will give one the advantage to his career development. For example, a person who can use System, Application and Products (SAP) will be able to help himself not only in current job but also use it to his advantage when looking for new jobs in other companies that also uses SAP. SAP is the ERP adopted by large companies in managing their business.*

Mr C also provided his opinion on the impact of Industry 4.0 on job profiles. He noted that:

> *In the IT environment, there are some job functions that did not exist previously but are now important in an organization, as for example with IT auditors. In today's world a vast number of companies carry out business activities using IT in a comprehensive manner, for example banks and supermarkets such as the Giant. The full use of IT in business transactions requires an auditing system rather than auditing based on trust; if the system that provides the financial statements is a good system, then the resulting financial statements will be good. So, for an auditor to become an expert, ensuring a good and reliable accounting system in placeis important. Generally speaking, if the percentage of IT audit and substantive testing in the audit work is 80% correct, it comes from the IT audit.*

In addition, Mr A noted:

> *There are significant changes in work performance today, for example in the use of accountants in every major company. Currently companies can use outsourced services to carry out accountancy work. Similarly, big companies can use a shared service center (SSC) concept for account preparations for each company within the group. SSC is a subsidiary company established in a group of companies which serves to provide accountant services for the group. So a subsidiary does not need to hire accountants of its own. This saves on costs and encourages increased expertise in an accountant. Accountants who work in the shared service center will know the other business activities indirectly while in the process of account preparations. This gives the accountant an opportunity to know the whole of the group's business. For example, Sime Darby, a diversified company, has business interests in plantations, construction work, hospitals, education, automotives and other diverse sectors. Hence, an accountant in charge of SSC within the Sime Darby group has the opportunity to communicate with officials and managers of other subsidiaries of various business dealings.*

To fulfill the expectations of employers, academics need to assist graduates to adapt to the changes brought about by technologies in the era of Industry 4.0. Academics can incorporate various technologies in the classroom so that the graduates are aware and are able to use these technologies. This does not only benefit the graduates but also the academics who themselves have to be able to adapt to the technologies available. As noted by Dr B:

> *To sustain career development, a worker is forced to adapt to changes. For example, a successful lecturer who is IT savy becomes a favorite among employees and colleagues. In the classroom, he is able to use IT to assist in the teaching process and is likely to be a favorite among the students. In addition, with IT some work processes become faster. For example in online quiz activities question preparation is more efficient and quicker scoring can be done. Bank questions can be uploaded into the data base and student scores are automatically recognized after students answer the quiz questions.*

4.4. Change Measures

The interviewed experts share the view that Industry 4.0 will result in change measures in work culture. Acceptance of the change in work culture should be embraced. As noted by Mr A:

> *Culture and acceptance of work also change. Previously, workers would be racing to press the punch card at 8 am and queue in front of the punch card system at 5pm. However, today in some companies employees do not have to use a punch card because they can work from almost anywhere. In today's borderless world, there are differing working hours. For example, subsidiaries in Malaysia always communicate with their holding companies such as those in the US. This process becomes more critical for accountants at the end of the month when they carry out work for the month end closings. Financial statements of Malaysian subsidiaries have to be closed and emailed to the holding companies for purposes of providing a consolidated financial statement. Given the different time zones, accountants of Malaysian subsidiaries may have to stay back late for purposes of completing their tasks.*

Mr A also noted that there is a difference or more cooperation between functions and between companies in the era of Industry 4.0. He explained:

> *IT also requires a strong cooperation between functions and between companies. For example, production departments need raw material to be processed into finished goods. The Raw material requirement form is filled in by the production department line or storage department for purchases to be made by the purchasing department and this information should be known by the accounting department for accounting purposes. In organizations that use ERP such as SAP and Oracle, the responsibility to accurately fill in each information is important because keying in the inventory is done only once, which is probably in the purchasing department. The information will continue on to the accounting department and be in the ledger inventory which becomes an important document in the accounting department. Cooperation is important to ensure everyone is doing their job properly so that proper recording is done and repetition of work is avoided.*

The panel of experts from the practitioners however, cautioned that companies may face resistance to change from their employees. Resistance to change is not uncommon since humans tends to be fixated to certain behavior and would not be easily accepting new technologies. This is more apparent for senior employees. Mr A noted that:

> *Various reasons are given by some staff to justify a system is bad. For example, outsourcing is not good because company information will be leaking out to outsourcers. SSC will slow down the work process and beyond. Actually they want to say that they are used to the old ways and they are happy to do work in the old way even though there is a faster way. They also face the problem of mastering the use of IT functions due to their basic and limited knowledge of IT and systems. Young workers are IT savvy but may lack experience and knowledge. Older employees may have good knowledge and experience but are slow in mastering IT.*

Mr C added:

Each new system which is introduced sometimes has many disadvantages and does not always determine the quality of the existing way of working. For example, the Audit software we used was not user friendly in the beginning and its capability was limited to certain audit processes only. But now, we are satisfied with the audit by the software we have because it has facilitated up to 50% of our work. So it is necessary for staff to be patient and open minded in accepting new things. An object of every change is one which everyone should understand and use to facilitate better performance and processing.

From the perspective of the academics, there is a consensus on the ways teaching and learning has to be changed to conform to the Industry 4.0 requirements and the employers' expectations. Dr B noted:

As a lecturer, there is also a change in culture and how it works. For example, we no longer have to use punch cards now, especially in this accounting faculty. Our presence is recorded using the application: i-attend "and we click on the phone or computer. Our KPI is our presence at the faculty during class and we need to conduct research and this requires us to be mobile as we have to prepare research papers to be published in journals. Dr B also added that in order to get journals and books for literature review purposes, we no longer need to go to the library to get the relevant material. We can get the materials on the internet. Similarly with students, they can get reading materials and references online. As a lecturer, I do not carry much physical material but at the same time, I have a lot of materials to share with my students. They are all stored in pendrives, I learn, and Google drive.

Dr D opined on the changes to the teaching and learning process:

In the classroom for example, we can instruct students to search internet on the spot while classes are on. This is to encourage them to be more independent while studying. We tell them to complete one group issue with internet references, and if they face problems they can come to me. In most cases, they can resolve the issues without asking me. This is more encouraging to them to be independent. Furthermore, for each class, I open a Whatsapp group, through which students can ask questions and respond to questions, not necessarily from me though. I l usually open up space for other students, for responses first. This makes them more responsive.

4.5. Social Consequences

Despite the various benefits from Industry 4.0 technologies, the panel experts opined that this era has its social consequences. The use of technologies in the era of Industry 4.0 may have a social impact on employees where restructuring of their companies may have to be done following the era of Industry 4.0. Mr A noted that:

Some systems introduced or developed by the company are sometimes not fully utilized by the employees, especially after the company has spent millions of dollars. The cost is more than the benefits. Also the development of a one-on-one system sometimes does not conform to what is designed in terms of time, cost and also the expected function. Sometimes it takes a longer time to complete than expected, costs above the budget and sadly, it cannot function as expected. In addition, if it is not regulated properly with the password method and so on, the company's information will be easily t leaked to competitors and others and this can hurt the company.

Mr A further opined that:

Besides, the use of such systems requires the company to provide financial allocation for yearly maintenance and improvements if the supplier introduces a new version of the system. Some suppliers, for earning management purposes, impose additional charges for the addition of each new function to the system. This adds to the cost of running the company. The cost of training will also increase with each developed system, besides the cost of hiring each new employee.

From the perspective of the academics, Dr B stated that:

However, it may have a social impact on some of the employees where internal restructures and job scope changes occur. This will have a social impact on some workers who cannot catch up with the new working environment. They may feel marginalized especially the aged, and encourage ideas of early retirement.

5. CONCLUSION

This study aims to examine employers' expectations of the knowledge and skills that they expect to see in accounting graduates before hiring them. The findings in this study indicate that the panel of experts from among the accounting practitioners reveal a rather consistent view, particularly on job redundancies (Frey and Osborne, 2013). The findings show a degree of replacement of human activities by electronic devices and machines and the shift from physical human activities to machines is expected (Blasi *et al.*, 2013). The academics opined that they themselves realised the changes in their job environments which are moving towards IT technologies. The accounting practitioners see the need for accounting graduates to focus on continuous learning and education. The top expectations of accounting graduates are their knowledge and skills in IT that is, they expect the accounting graduates to be knowledgeable in IT and programming skills (Mason *et al.*, 2006). The findings shown in this study are consistent with Doll (2015): Bonekamp and Sure (2015).

This study is not without limitations. First, the findings in this study are based on interviews with four participants, two representing accounting practitioners and two from accounting academics. Perhaps, future studies y could increase the number of participants in order to provide more comprehensive findings. Secondly, this study uses the qualitative approach in achieving its objectives. Future studies can be conducted using the quantitative approach in order to provide support to the findings in this study.

This study contributes to existing education literature by providing new findings on the expectations of employers of future accounting graduates. In addition, this study contributes to the understanding of academics and universities in strategizing ways and innovating new teaching and learning approaches so that graduates' employability can be enhanced and the needs of the current labour market for accountants can be accommodated.

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