CHAPTER 6

INDUSTRIAL REVOLUTION SKILLS AWARENESS AND READINESS

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6.1 INTRODUCTION

The 4th Industrial Revolution (4IR) has been in the spotlight in recent years due to the new emerging technologies and the disruption it has caused to industries across the world. The old ways of producing and doing business have been significantly altered. Compounding this disruption to the COVID-19 pandemic, which necessitates a greater online interface and working from home, there seems to be no turning back in the way society interacts. As more people use the Internet for business and leisure, more data on their activities and preferences is now available to website owners and system providers. This so call "big data" is now the subject of analyses of interfacial intelligence device, allowing the users of the device to make accurate predictions of people's preference and behaviour and even conditions them to user advantages, amongst others. Regardless, one thing is for certain is the rise in online technology has turned many existing jobs redundant and obsolete – more so in the light of the 4IR. As for this 4IR, the rise in automation has resulted in less need for a human workforce. According to the McKinsey report, by 2030, around 75 million to 375 million workers, or

3 to 14 percent of the global workforce, will need to switch their job categories (Manyika et al., 2017). As more jobs descriptions are changing, the skills needed to match these jobs are also evolving. Accounting professionals with IT skills such as data analysis, information security, and general controls are likely to become highly sought-after by employers and will reflect their salaries due to the demand. Therefore, this revolution in jobs and thus the skill requirements have set different expectations of qualities sought among future graduates by employers (Association of Certified Chartered Accountants [ACCA], 2020).

Hence, the key objective of this study is to investigate the level of knowledge regarding the 4IR and the level of skills related to the 4IR possessed among Azman Hashim International Business School's (AHIBS) accounting students. This study also investigates students' work readiness and what improvement AHIBS can make to better equip students with necessary 4IR's skills.

6.2 THE 4TH INDUSTRIAL REVOLUTION

In this research, there is no consensus on a single, clear, and concise definition of the 4IR (Piccarozzi et al., 2018). However, a comprehensive definition of the 4IR, as suggested by a previous study, states:

> "Industry 4.0 refers to the integration of Internet of Things technologies into industrial value creation enabling manufactures to harness entirely digitised, connected, smart and decentralised value chains"
>
> (Prause & Atari, 2017)

According to Schwab (2017), 4IR is characterised as the fusion between these technologies and the physical, digital, and biological domains, by a more ubiquitous and mobile internet, by smaller and more powerful sensors becoming cheaper, and by artificial intelligence and machine learning. He further said that breakthroughs can be seen in gene sequencing, nanotechnology, renewables, and quantum computing, making the 4IR fundamentally different from other previous revolutions.

This revolution can also be characterised as products and production processes that are connected to internet-based applications, and this trend is increasing rapidly (Badem & Kilinç, 2019). The difference between the 4IR and previous revolutions is the exponential rate of technology development (Schwab, 2017). Past studies suggested that there is a positive relationship between digital literacy, technology literacy, and human literacy and accounting students' readiness to work in jobs during the 4IR (Lestari & Santoso, 2019).

6.2.1 Technological and Digital Skills

According to Hoffman (2017), technologies such as XBRL-based structured digital financial reports, knowledge-based systems and other applications of artificial intelligence, and blockchain-based distributed ledgers enable businesses to operate in significantly different ways, and there is a need for professional accountants and accounting procedures to adapt to these technologies to keep themselves abreast of the changes. According to ACCA (2016), skills such as knowledge of new business models, funding sources, payment services, and production will be vital to accountants. In order to keep auditing relevant and ahead of time, accountants must also obtain knowledge in financial technology (FinTech), big data, artificial intelligence, and digital delivery services (ACCA, 2016).

6.2.2 Soft Skills

A systematic literature review by Maisiri et al. (2019) investigating 4IR skill requirements highlighted soft skills needed, which they grouped into three categories: Thinking skills, social skills, and personal skills. Examples of thinking skills are creativity, innovation, practical ingenuity, critical and logical thinking, flexibility, complex problem solving, troubleshooting, technical and literate communication, collaboration, including with machines –human, and interdisciplinary skills. Examples of social skills are teamwork, self-awareness, self-organisation,