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**INDUSTRY 4.0 : CHALLENGES AND IMPACTS TOWARD
CONSULTANTS IN MALAYSIAN CONSTRUCTION
INDUSTRY**

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ABSTRACT

Driven by the rapid growth and convergence of existing technologies, the Fourth Industrial Revolution, also known as Industry 4.0, is a combination of technologies such as big data and artificial intelligence (AI), and value chain organisation. However, it has attracted a widespread debates on the challenges and opportunities that poses to the future of work and skills development. Not only that, it is recorded that the construction industry companies still cannot cope to consolidate these innovative technologies unlike others, who came from the mechanical engineering sector or automotive sector. Even the government itself did not play fairly in positioning our construction industry together with the manufacturing industry that had their own policy. Due to this scenario, this dissertation's research objectives are mainly focused on the challenges and impacts of Industry Revolution 4.0 towards the consultants who work in the construction industry. The method used for this study was a simple random sampling sytem for the consultant companies in Selangor area involving a total of 80 respondents who participated in this study. Online questionnaires were distributed in order to receive the feedbacks in identifying the challenges and impacts of Industry 4.0 in Malaysian construction industry. This study's analysis showed that the consultant companies were overall agreed that high cost is the main challenges of Industry 4.0 in Malaysia. In the meantime, the main impacts of Industry 4.0 in Malaysia is it encourages innovation in our construction industry. Hence, it can be concluded that Industry Revolution 4.0 still has a long journey to be adopted majorly and widely in our construction industry even though it have its beneficial and advantages.

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CHAPTER 1

RESEARCH BACKGROUND

1.1 INTRODUCTION

Industry 4.0 is a combination term for technologies and value chain organisation which draw together cyber-physical systems, the Internet of Things (IoT) and the Internet of Services (IoS), together with other technologies such as big data, cloud technology, artificial intelligence, predictive analysis, agile, augmented reality, collaborative robots, and additive manufacturing. According to the Council for Scientific and Industrial Research (CSIR) (2018), the Fourth Industrial Revolution (FIR), also known as Industry 4.0, is being driven by the rapid growth and convergence of existing technologies. It is assured that Industry 4.0 is considered to overcome the numerous challenges experienced in construction. The fourth industrial revolution, or Industry 4.0, is now gaining momentum and requires a standard alteration that will significantly impact the consultants in Malaysia.

The advent of this revolution has attracted widespread debates about the challenges and opportunities it poses to the future of work and skills development. Additionally, whilst 4 Industrial Revolution (4IR) introduces digitalization, automation, robotics and artificial intelligence (AI), which can generate opportunities for the economy and society, there is great uncertainty regarding job security in this new era (Chetty et al., 2017). In fact, the World Economic Forum predicts a net loss of five million jobs in fifteen developed and emerging markets by 2020, resulting from developments in 4IR (WEF, 2016a; 2016b). Furthermore, as many as two-thirds of all jobs, mostly in developing countries such as South Africa, could be at risk (WEF, 2016a). Kamaruzaman, et. al. (2019) outline that this risk to job losses is directly linked to the mismatch of skills required by jobs relevant in the