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**INDUSTRIAL REVOLUTION 4.0 COMPETENCIES
OF QS GRADUATES: EMPLOYER'S EXPECTATION**

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ABSTRACT

Currently, the construction industry is facing a new phase of the industrial revolution where computers and robotics are implemented around the midst of the revolution thus bring new technology that can give many benefits to the construction industry. Along with the transition to the new revolution, customer needs and demand in the construction industry have been more diverse and more complicated. Thus, professional personnel in the construction industry which also included quantity surveyor (QS) must be trained with relevant expertise and competencies while being committed to the ongoing growth and application of new skills. Past studies that have examined the lack of benchmarking of the competencies required has left many parties in the industry unsettled. These issues are the focal point of this study. Therefore, this dissertation is aim to establish the employer's expectation on the quantity surveying graduates competencies for effectively perform in facing Industrial Revolution 4.0 (IR 4.0). The dissertation objectives were to identify employer's expectation on the quantity surveying graduates competencies required in facing IR 4.0 and determine employer's expectation on the effect of lacking quantity surveying graduates competencies in facing IR 4.0. Aside from that, it is also to determine the employer's initiatives to improve quantity surveyor competencies in facing IR 4.0. The survey method used was a questionnaire distribution to construction organisations. The dissertation reveals that employers expect quantity surveyors to still have knowledge and skill in quantification/ measurement and cost estimation as their main competencies to face IR 4.0 and there will be a stagnant increase in QS salary and become underpaid due to lacking competencies. Therefore, many initiatives such as employers sent their staff to attend training programs are required to increase QS competencies for the IR 4.0 in Malaysia.

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CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

This chapter will establish the mainframe of the study. As an introduction, the background of the study will be discussed briefly. The problem statement, aim of the research, research question and research objective will be listed. The detail of the research methodology will be further discussed in the next chapter.

1.1 BACKGROUND OF RESEARCH

The construction industry is a broad flat sector that provides significant assistance to all other sectors, where value creation primarily occurs in the context of facility or asset creation (Alaloul et al., 2018). Owing to its dynamic nature and the participation of multi-disciplinary stakeholders, the building industry faces common costs, time and efficiency problems (Zainon et al. 2018). It is therefore important for the construction industry to undergo an evolution in the era of globalisation, with the goal of achieving international competitiveness (Zainon et al., 2018). According to Ibrahim et al. (2019), the term industrial revolution has become popular nowadays in construction industry. Any new revolution has socio-economic impacts toward construction industry either positively or negatively.

There are 4 stages of industrial revolution that give huge impacts to construction industry. The first industrial revolution emerged as a result of mechanization (Oesterreich and Teuteberg, 2016) and primarily assisted by a water and a steam engine (Vaidya et al, 2018). This transition has transformed industry from manual labour to the first manufacturing process. The second industrial revolution took place as a result of mass production and electrical energy (Oesterreich and Teuteberg,