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## Talent Development Program Towards Enriching Future Ready Industry Revolution 4.0 in Johor

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### Abstract

The aim of this paper is to examine the relationship between talent development program and future ready Industry Revolution 4.0 in Johor. The variables consist of talent ecosystem (EC) as independent variable and industry demand of IR 4.0 is the dependent variable. This study adopted quantitative approach using IBM SPSS version 26. The survey was conducted on the future talents in higher education in Johor. Total of 350 respondents were selected in this study. The expected finding will ensure that the transfer new talent to industry and at the same time improve practical capabilities and employment competitiveness by having integration between Industry and Academia to meet industry demand.

**Keywords:** Talent Development, Talent Ecosystem, Future Ready, Industry Revolution 4.0, Johor

### Introduction

As traditional jobs disappear, Malaysia needs to train a new generation of workers who can fill the rising demand for cloud, artificial intelligence (AI) and emerging technologies. As businesses move into the digital era, the transformation will create more opportunities for Malaysians to participate as digital talents. It is clear that digital readiness is no longer optional, it's a must. And Malaysians need to prepare for some sort of technical skills and aptitudes for technology solutions to meet the demand for new collar workforce now, and in the future. Since the demand for tech talents across every industry rapidly grows due to the massive adoption of technology by the industry in this COVID-19 era, it is a timely call for the country to aggressively develop and produce more tech talents in meeting the necessary demand for digital transformation. This is because the demand for tech talents has increased significantly according to Randstad Malaysia's latest talent outlook report, possibly due to the

rise in demand for almost every organisation moving to the digital economy for business survival during the crisis.

Industry revolution (IR) 4.0 refers to a new phase of the Industrial Revolution that focuses heavily on interconnectivity, automation, machine learning, and real-time data. Industry 4.0 is not just about investing in new technologies and resources to boost the efficiency (Rojko, 2017). IR 4.0 had a broad influence on different aspects of human activities and affects every aspect of their lives. With rapid technological advances including artificial intelligence (AI), the Internet of Things (IoT), data-driven decision-making, virtual increased reality and robotics, it is apparent that potential workforce needs to be technologically capable. It is expected that robots will take over routine tasks like supervision, in whole or in part. It is a daunting challenge to implement Industry 4.0 as it will be difficult to find new people with the digital skills needed to operate new systems and adapt them to future technologies.

It is crucial importance to provide the future workforce with adequate education. Researchers expect that IR 4.0 would entail fundamental changes in major aspects of education on the basis of the trends. IR 4.0 requires improvements not only in technical education but also in general education. Graduates must be creative and entrepreneurial, and be able to manage uncertainty with cognitive versatility. Even more critical than ever is the need for improved communication and collaboration skills. To remain important in the era of rapid change, graduates need to develop self-learning skills (Abdul Haseeb, 2018). Industry 4.0 implementation is highly dependent on the willingness of the workforce to apply and refine the use of new technology applicable to the working environment of Industry 4.0. The key concern is the development of human resources with the inculcation of abilities that will be able to perform in IR 4.0 (Ahmad, 2016).

The following section will discuss on the talent development (talent ecosystem) and future ready Industry Revolution 4.0 in Johor. Next sections, followed by a brief discussion of the research methods and expected findings. Finally, this paper end with a conclusion of the present study.

## **Literature Review**

### **Talent Development**

Given the impacts of a global pandemic, it should not be shocking that digital transformation is on the rise. In the digital era, ICT is a leading industry in the digital economy which faces great challenges in optimizing its industrial structure and accelerating digital transformation. As the industry transforms, the key to maintaining rapid development, seizing opportunities, and making progress in the new era is treating talent as the industry's most important resource.

The world is now entering the digital economic era and Malaysia has to be prepared in order to be a true information-rich society. Malaysian businesses need to adjust to the rapid technological changes that impact the way companies work in order for Malaysia's digital economy to succeed. Companies must consider improvements in order to remain competitive. Malaysia Minister of Youth and Sports Khairy Jamaluddin said that "rapidly developing digital economy is increasing the demand for highly skilled technical workers, and digital business skills". Regardless of challenges in getting high skilled jobs for the local workforce (Nixon et al., 2017), Malaysia's graduates unemployment rate hit 10.7% in 2015, more than three times the national unemployment rate of 3.1% (Ibrahim et al., 2016). This is partly due to the higher education prioritizes theories and concepts but neglects practices

and capabilities. First, talent supply and demand are somewhat disconnected, and the model struggles to support the industry's development. In this context, a long-term strategy that includes resource sharing, complementary advantages, and joint development between universities and enterprises is needed to accurately match the talent supply with the demand to achieve mutual benefits among universities, enterprises, and talent and support the industry's development especially in Johor. Theoretically, the cooperation between universities and enterprises can be key in promoting a solution to the talent dilemma.

### **Talent Ecosystem**

Digitalization has contributed to one of the most fundamental behavioural changes in human culture and, in particular, to how well-established and emerging companies operate in the marketplace. The Covid-19 has been identified by the government that digital economy helps in accelerates the growth of digital economy. The digital economy as one of the key economic growth areas to achieve national commitment of elevating the country to be a nation of sustainable growth while ensuring fair and equitable distribution across income groups, ethnicities and regions (Bernama, 2021).

The industry (demand) and universities (supply) are not at equilibrium point. It showed that the talent development towards collaborating and developing people isn't fully developed. Third, the prioritization of theories over practices is an ongoing problem. As digitalization accelerates in various industries, colleges and universities urgently need to focus more on cutting-edge technologies, ensure that courses keep up with the times, guarantee that teaching materials are related to industry practices, and help students become more employable. Due to the transition of the digital economy, the global workforce is projected to undergo a substantial change between work relations and purposes. Many industries across countries are already experiencing difficulties in hiring young students, and the situation is expected to worsen dramatically over the 2015-2020 timeframe. Reducing the mismatch between the skills available and those required for the digital transformation of the economy has been a key priority over the last decade.

### **Future Ready Industry Revolution (IR) 4.0**

Science and technology had evolved and lead to the fourth Industrial Revolution (IR 4.0). IR 4.0 was introduced from Germany and inspired by the Germany government to promote digitization and technology to the world. One of the major cores of IR 4.0 is Artificial intelligence (AI). (The Sun Daily, 2018) It had brought the industries toward a better way of production. In this digital transformation age, AI has played an important role in changing the industrial processes from inefficient way become a more efficient way. AI is a machine demonstrated the intelligence with the ability to solve problems by gathering and analysing the data that are usually done by human natural intelligence. There are four main views to be categorized as AI, which are thinking humanly, thinking rationally, acting humanly, and acting rationally. AI is capable of performing task intelligently by fulfilling these four different approaches (Sharma, 2020).

Today, Malaysia has walked into the Industrial Revolution 4.0 (IR4.0). The technology in digitalising Malaysian Industries can bring a lot of benefit to the industries in Malaysia. Most of the industries are using technology to improve their daily operation and business activities (Juhary, 2020). The industry of the future will be an industry in the era of the digital revolution which capable of producing more smartly, efficiently, quickly, safely, and cleanly (Asmiyanto, 2019).

According to MITI, Malaysia is actually somewhere between Industry 2.0, which is the mass production of products, and Industry 3.0, Automation. It is a slow process that faces many challenges, such as the lack of knowledge and understanding of Industry 4.0 and the lack of standards and skills. It was reported that there is a shortage of qualified people in science, technology, engineering and mathematics (STEM) and a lack of emphasis on digital literacy and innovation, resulting in a workforce that is less adaptable to fast-moving technology (Lee, 2020). Access to skilled labour is now a key factor that separates effective firms from failed ones. In the Fourth Industrial Revolution, skill gaps across all industries are poised to expand. In ever-shorter periods, rapid developments in artificial intelligence (AI), robotics and other new technologies are changing the very nature of the jobs that required the skills to do faster than ever before (Milano, 2019). According to the World Economic Forum report, there are ten skills that required for the Fourth Industrial Revolution. These are complex problem solving, critical thinking, creativity, people management, coordinating, emotional intelligence, judgement and decision-making, service orientation, negotiation and cognitive flexibility (Gray, 2016).

### **Research Methodology**

The quantitative approach will be conducted using online pre-questionnaires and post-questionnaires using IBM SPSS Statistics. A two-part (pre and post) questionnaire must be developed that includes the program objectives. Pre-questionnaires and post-questionnaires are often used during workshop to assess the impact of a program on the participants. This output of research in line with the second objective of Shared Prosperity Vision 2030. For IBM SPSS Statistics, descriptive statistics analysis was used to determine the percentage and frequency distribution in order to analyse the data of the sample. Specifically, frequency distribution was used to summarize the respondents' profile, mean to indicate the data concentration, and standard deviation to indicate the variability.

The population in this study was undergraduate students who will be graduating, fresh graduates, alumni and unemployed from higher education Institution in Johor. Total of 350 respondents were selected to obtain a reliable data with 95 percent confidence level and  $\pm 5$  percent allowable error. Random sampling method was applied to select the respondents of the study. Hence, all the participants from the program have an equal chance to be selected as the respondents of the study. In this study, an online survey will conduct by distributing the questionnaires. This is because online survey-based questionnaires are practical for a large sample (Ponto, 2015). The researcher will create an online survey with Google Docs. In this study, respondents were asked to rate their responses on five-point scale, ranging from "1" (strongly disagree) to "5" (strongly agree).

The data will be analysed using the Statistical Package for the Social Sciences (SPSS) version 26 to evaluate the relationship between talent development program and future ready Industry Revolution 4.0 in Johor. Numerous data analysis sets will be used in this study such as analysis on reliability, descriptive analysis, t-test, one-way ANOVA, analysis of multicollinearity, and analysis of multiple regressions.

### **Expected Findings**

This study will shed some light on the emergence of IR 4.0 towards enriching digital economy in facilitating the digital transformation to adopt and apply the knowledge and skills in addressing social needs. This expected finding will ensure that the transfer new employees to industry and at the same time improve practical capabilities and employment

competitiveness by having integration between Industry and Academia to meet industry demand as one of the important indicators for talent development achievements in Johor.

### **Contribution of the Study**

This study will be integrated using a quadruple helix approach which consists of government, universities/researchers, industries and communities to work together in the pipeline that will provide a fresh talent ecosystem to support industry demand of IR 4.0 in order to meet industry demand in which the research has not yet received sufficient attention, particularly in Malaysia. Hence, this research is expected to enhance the socioeconomic well-being and as one of the important indicators for talent development achievements in Johor. This study aligns well with one of the 12 National Key Economic Areas proposed by the Government, which is to nurture innovation and broadening the country's knowledge and skills base by expanding the country's areas of specialization into new, untapped sectors, especially for community development.

### **Conclusion**

With the emergence of new technologies towards enriching digital economy, the government could use the main findings of the proposed study to achieve efficient communication between the AI industry and the education industry and provide workforce to meet industry demand. The execution of this study is also in line with the Shared Prosperity Vision 2030, whereby the second objectives is addressing economic disparities across income groups, ethnicities, and regions to protect and empower the citizen in ensuring that no one is left behind. Hence, the talent development towards IR 4.0 in Johor is seen pertinent, especially in order to ensure the industry demand and universities supply meet at equilibrium point. It is suggested that the similar research can be conducted in few other states in Malaysia by expanding the sample size to collect a more collective database that help other scholars or policy makers to redesign and restructure a more holistic approach towards enriching future ready talent in Industry revolution 4.0.

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