

**CHAPTER**

**10**

**MODELLING OCCUPATIONS  
SUITABILITY AMONGST  
GRADUATES USING  
LOGISTIC REGRESSION**

*Zarina Mohd Khalid and Muhammad Najib Roslly*

**10.1 INTRODUCTION**

Employability is a set of skills, knowledge and personal attributes which make an individual more employable. Meanwhile, graduates' employability defines the knowledge, skills and experiences the graduates acquired while them studying which make them more employable. Kementerian Pendidikan Malaysia (KPM) stated that the employability rate of graduates in year 2018 has increased slightly as compared to that in the year 2017. The employability rate in 2018 was 80.2%, compared to the employability rate in 2017.

In Malaysia, based on “*Infografik Kebolehpasaran Graduan Tahun 2018*” in the KPM official website, the employability rate of male graduates is greater than the female graduates. The statistics shows that male graduates have 82.3% employability rate and female graduates has 78.7% employability rate which has 3.6% difference. The graduate's employability is categorised into employed and unemployed. According to the infographic, the employability rate of Science, Mathematics and Computer graduates is the lowest compared to the Education,

Engineering, Manufacture and Construction graduates. Science graduates consist of Physics, Chemistry and Biology graduates.

The appropriateness of occupations is critical in comparison to graduates' employability. The comment is made when graduates express dissatisfaction with their jobs since they are unrelated to their studies or programs. Other graduates state that they work just to pay off debt, even though the employment is unrelated to their major field. For example, mathematics graduates may work as laboratory assistants at a designated school. Graduates are being forced to work as lab assistants, even though the job has nothing to do with mathematics, to pay off their debt. However, no one can judge or insult this situation. A controversy erupts as a local university lecturer declares that the food delivery career is not considered dignified. While this statement is partially true, stating that a career in food delivery is not dignified was a very unprofessional and harsh statement. Most grads work as part-time food delivery drivers while looking for full-time work. There are a small number of graduates that choose food delivery as a career for good reasons. In conclusion, job appropriateness is critical to avoid regret and to assure a better life in the future.

By 2022, an estimated 133 million employment would be created globally, but 75 million more will go extinct because of technology advancements. The findings were contained in the Employment Report 2018, which was established last year at the Future World Economic Forum's summit in Switzerland. Jobs on the verge of extinction include those based on artificial intelligence (AI), digital technology, robotics, and new technologies. This abrupt transition may influence graduates' employability rates, as they will compete for jobs with many people who have recently lost their jobs. Apart from that, professions' appropriateness will rise because of the increased work opportunities. Graduates may find their desired job among the 133 million available positions. This shift occurs because new occupations relate to current jobs that will be crucial or important in the future, whereas extinct jobs refer to existing jobs with declining demand or interest.

## **10.2 PRIOR LOGISTIC REGRESSION APPLICATIONS**

Logistic regression seeks to model the probability of an event occurring depending on the values of the independent variables, which can be categorical or numerical. Other than that, logistic regression can be used to estimate the probability that an event occurs for a randomly selected observation versus the probability that the event does not occur. Then, it also can predict the effect of a series of variables on a binary response variable and classify observations by estimating the probability that an observation is in a particular category (such as approved or not approved in our problem).

In the paper *Trends in Awareness and Use of Electronic Cigarettes among US Adults from 2010–2013*, the problem that writers dealt with is with the use of electronic cigarettes among the United States (US) adults. Electronic cigarette (e-cigarette) marketing has expanded significantly since the item entered the US market in 2007, along these lines justifying extra observation to screen ongoing patterns in populace level mindfulness and usage. During the period 2010–2013, we examined the prevalence, features, and trends in e-cigarette awareness and use among nationally representative samples of US people (King, 2015). The logistic regression technique was used to validate and generate trends in electronic cigarette awareness and use among US people.

Diabetes is a serious and increasing global health burden and estimates of prevalence are essential for appropriate allocation of resources and monitoring of trends. Since then, there was a paper published in 2018 which is about IDF Diabetes Atlas: Global estimates of diabetes prevalence for 2017 and projections for 2045. There is a logistic regression model used in this paper to generate age-specific prevalence estimates for each country. Estimates for countries without data were derived from comparable countries (Cho, 2018). Additionally, sources from diabetes experts in each of the seven IDF zones were contacted and mentioned to provide statistics on the prevalence of diabetes in countries within their region. The seven IDF