

A CRITICAL REVIEW OF THE LITERATURE ON THE CONCEPT OF JOB MISMATCH AND OVEREDUCATION

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Abstract

Job-education mismatch and overeducation issues among graduates have been discussed extensively, specifically related to the incidents, determinants, methods of measurement, and the effects of the mismatch. Despite this, the concept of job-education mismatch itself is not clearly explained. Since understanding this concept has theoretical and practical implications, this paper provides a critical review of the job mismatch concept and relates it to overeducation, which is a type of job-education imbalance under a vertical mismatch. This study relies solely on the literature review and does not provide any empirical evidence related to these concepts. A few issues have been highlighted and worth considering for further deliberation. Firstly, even though job-education mismatch, overeducation, overqualification, and underemployment are interchangeably used, these concepts have quite a distinct meaning. Secondly, when individuals' skills are considered in discussing vertical and horizontal mismatch, the scope of mismatch tends to be broader than that of overeducation. Thirdly, the discussion on overeducation tends to concentrate on the level of study imbalance and not on both the level and type of study. Fourthly, job-education imbalance by the field of study (horizontal mismatch) is not easily defined, and the discussion tends to be related to overeducation.

Keywords: *Mismatch, overeducation, qualification, graduate, job.*
JEL Codes: *A22, J81, J82.*

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Introduction

The rapid expansion of higher education in Malaysia has contributed to an increase in the number of graduates entering the labour market. In the era of a digitalized economy, this positive outcome is expected as the market demand for skilled workers increases to cater to the industry's needs. Despite this positive development, the percentage of unemployment among graduates continues to be a highly debated issue. It is crucial that the issue related to graduate marketability and employability, such as unemployment and job mismatch, be addressed considering a considerable amount of investment that has been made either individually or through government subsidization to prepare these graduates for the labour market. From the investment standpoint, this situation reflects a low or negative return for investment and a loss for the country as human capital is not efficiently allocated.

Evidence from Malaysia suggests that graduates not only face difficulties to place themselves in the job market. A large percentage of them are doing jobs that do not commensurate their level of education. In other words, they do jobs that require a lower level of qualification. Studies report that the number of graduates in Malaysia who are in a non-match job is between 26 and 41 percent of the total number of graduates (Ishak et al., 2008; Lim, 2013; Zainizam & Battu, 2013; Asnida et al., 2019). The Graduate Tracer Study conducted by the Ministry of Education Malaysia in 2018 found that from 58.6 percent graduates working, only 49.9 percent are in a matched job, which is

in the major category of an occupational group (1) - (3)¹. They work in managerial, technical & associate professional, and professional jobs. In contrast, the rest are engaged in jobs that require only a high school education qualification. They are in occupational groups (4) - (8), such as clerks, service workers, and salesperson, and in a group (9) that involves elementary work that requires a primary education qualification.

The job-education mismatch has been discussed extensively in various fields, such as economics, management, sociology, and psychology (Thompson et al., 2013). Evidence shows that most studies are concentrated in developed countries, such as Australia (Linsley, 2005; Voon & Miller, 2005), Canada (Frenette, 2004; Wald, 2005), and Europe (Tarvid, 2013). The discussion covers a wide range of issues that have impacted individuals and reflects the inefficiencies in the labour market, such as reduced individual income levels, low individual happiness, poor health and well-being, reduced life satisfaction, reduced job satisfaction, and productivity loss (Asnida et al., 2019). Interestingly, the vast literature in this topic focuses on the incidents, determinants, method of measurement, and the effects of the mismatch. Little is discussed about the concept of job-education mismatch itself. Since understanding this concept has theoretical and practical implications, this paper provides an in-depth review of the concept of job mismatch in the labour market. In meeting this objective, relevant literature related to this topic is critically reviewed.

Job-Education Mismatch

The job-education mismatch is an important topic among researchers because of its various consequences on the labour market (Veselinović et al., 2020). Job-education mismatch happens when the job performed does not match individual skills or education (Li & Wang, 2020). The terminology is often interchangeably used with overeducation, overqualification, underutilization, and underemployment (Frenette, 2004; Vaisey, 2006; McKee-Ryan & Harvey, 2011; Robert, 2014) because these terminologies reflect the inefficiencies in the use of human capital endowment. However, the use of each terminology depends on the context of the study. For example, overeducation is widely used in studies related to graduates, higher education, and the economy. The term overqualification is usually used in psychological studies, sociology, and organisational context that focus on the attitude of workers and work performance (Maynard et al., 2015; Wang et al., 2019). On the other hand, the term underemployment is mostly used in the context of employment and organization when its definition entails (1) mismatched working hours (working hours less than what it is supposed to be) or (2) the work done is underutilizing skills, training, and experience (Beukes et al., 2017).

The International Labour Organization (ILO) classifies job mismatch into two types, namely (1) a mismatch between the demand and supply of skills based on a comparison of the education of working and unemployed people, and (2) a mismatch of skills by comparing the education attained and education required by the occupation (Asnida et al., 2019). In other words, the first type of mismatch is to compare between the working people and the unemployed, while the second type is a comparison among working people, but in terms of an imbalanced qualification between what is needed and required. In general, a job-education mismatch (which is the type 2 of ILO) can be categorized into a vertical and horizontal mismatch. Basically, a vertical mismatch refers to a situation where the individual's actual educational qualification exceeds/less than the level of education qualification required by a job (Bol et al., 2019). That is, it measures the mismatch in

¹ Major category of occupations based on MASCO (Malaysia Standard Classifications of Occupations)

terms of *level* because it compares the level of education achieved with the level of education needed to perform a job. It is also referred to as a mismatch in the quantity of study instead of the type of study. Meanwhile, a horizontal mismatch occurs when the field of job one is in does not match the individual's field of study (Croce & Ghignoni, 2015). For example, if a degree teacher works as a clerk, he/she is experiencing a vertical mismatch, but if this teacher holds a post as a statistician, he/she is said to experience a horizontal mismatch.

However, the use of the vertical and horizontal mismatch in the literature depends on the researcher's definition. For example, Bol et al. (2019) consider both concepts equivalent and categorize them as a 'mismatch'. For example, if a doctor works as a nurse, he/she is considered to be on a vertical mismatch, but he/she is still in the same field of study horizontally since it is difficult to differentiate the job by the area of study. Based on the literature, Figure 1 shows a broad concept of mismatch. As shown in Figure 1, the vertical mismatch can be viewed in terms of skill and education and can be further divided into three categories, i.e., over, under, or required education or skill. The next section will elaborate this in detail.

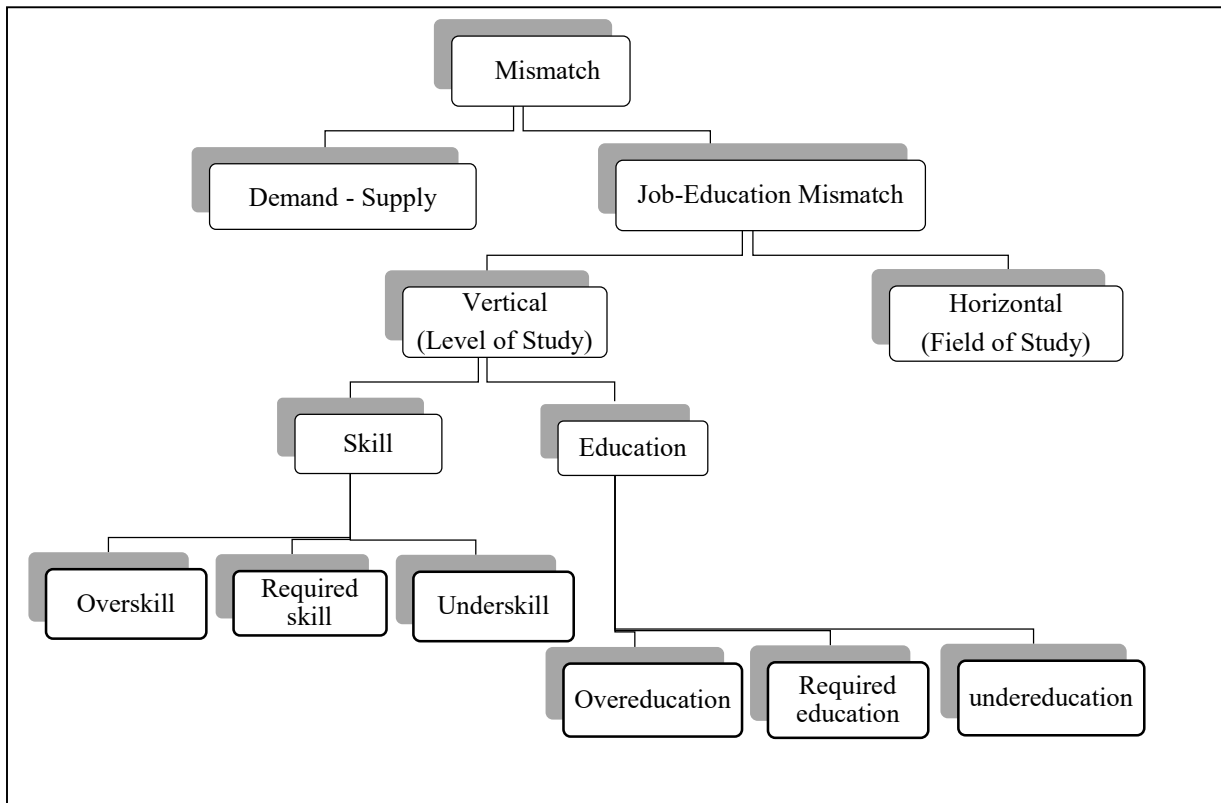


Figure 1: Mismatch Concept Diagram
Source: Developed by authors

Vertical Mismatch and Overeducation

The concept of vertical mismatch in education has been widely researched. This vertical mismatch can be divided into three categories, namely overeducation, undereducation, and required education (Desjardins & Rubenson, 2011). However, the vertical mismatch is more focused on overeducation issues, instead of undereducation (Sloane, 2007). Overeducation is a situation where

an individual works in a job that requires a lower level of education qualification than their actual educational qualification (Garcia-Espejo & Ibáñez, 2006; Rahona-López & Pérez-Esparrells, 2013; Gajderowicz et al., 2014) and vice versa for undereducation. Meanwhile, required education is a situation where the educational qualification matches the education required by employment. Meroni and Vera-Toscano (2017) categorise the overeducation concept into two types. They are *apparent* and *genuine* overeducation. Both types explain about overeducated workers in different situations. In essence, *apparent* overeducation occurs when overeducated individuals still have skills that match their employment scope, whereas *genuine* overeducation is otherwise. Genuine education is said to be more harmful than the former. Measurement of skills can also be divided into three, namely over-skilled (skill surplus), under-skilled (skill deficit), and required skill (Desjardins & Rubenson, 2011). In general, the mismatch concept becomes wider when it also involves the skill aspect and not only education.

There are different views on the concept of job-educational mismatch and overeducation. While Halaby (1994) categorizes these two concepts as equal, Barcena-Martin et al. (2011) disagree and argue that the discussion on overeducation often ignores individual skills and focus on education. Allen and De Weert (2007) also maintain that the scope of mismatch is broader than overeducation when individual skills and educational qualifications are considered in performing a job. When discussing the concept of mismatch or overeducation, most studies focus more on education and ignore skills. This is because measuring mismatch in the form of skills is more difficult, and the data are often not readily available. The proxy typically used to represent skill mismatch is educational attainment (International Labour Organization, 2013). If this is the case, skills mismatch and educational mismatch are not different. However, Desjardins and Rubenson (2011) stress the importance of skill to represent mismatch instead of education. They believe that education is not a good indicator of skills, especially when the individual has left the education system after some years. They contend that the use of skill is more precise because the skills gained and lost are considered when measuring mismatch.

Most studies define overeducation through its measurement. Overeducation is measured by comparing the individual's actual education and the education required by the job. It is easier to measure the individual educational level gained than the level of education required because the data about the number of years of study are accessible. To measure overeducation based on the required education, three methods are often discussed. They are the (1) Job Analyst Method, (2) Realized Match, and (3) Worker's Self-Assessment Method. These methods are also known as an objective, empirical or statistical, and subjective method, respectively. The objective approach determines overeducated workers based on the classification made by a professional job analyst. This occupation classification is normally based on the classification determined by the Dictionary of Occupational Titles in the International Standard Classification of Occupation (ISCO) (Asnida et al., 2019). Statistically, the determination of overeducation, undereducation, and match is based by comparing an individual's actual education level against the mean or mode value calculated for the required education level. Finally, the subjective method requires the individual to provide information on the different types of skills and education for each occupation category in their job. According to Battu et al. (2000), Kucel (2011) and Blazquez and Budria (2012), there is no specific and best criterion in determining which method should be used because it depends on the availability of data (Boudarbat & Chernoff, 2012) and the limitation of the study (Farooq, 2011). According to Agut et al. (2009) and Linsley (2005), the self-assessment method is considered the

best measurement compared to the other two. This is because it has the advantage of providing measures that are easily observable, specific to the job of the individual, and is up to date (Meroni & Vera-Toscano, 2017).

The use of different types of measurement will also produce different results (Groot & Maassen van den Brink, 2000; Robert, 2014), and each measurement method has advantages and disadvantages (Verhaest & Omeij, 2010). Although several alternative measures exist (such as in Chevalier, 2003; Ortiz & Kuchel, 2008; Betti, D'Agostino, & Neri, 2011; Mehta et al., 2011), these three methods have been discussed extensively and continue to be used in measuring overeducation or defining overeducation.

Horizontal Mismatch and Overeducation

The discussion on the horizontal mismatch occurred in literature (Robst, 2007; Boudarbat & Chernoff, 2012; Domadenik et al., 2013). An individual is said to be in a horizontal mismatch or type of study imbalance when there is a difference between the field of study from the learning institution and the scope of employment but at the same time has an equal level of education attained and education required by the employment (Wolbers, 2003; Robst, 2007; Caroleo & Pastore, 2012; Veselinović et al., 2020). The literature that discusses the field of study and overeducation separately is sparse (see Wolbers, 2003; Nordin et al., 2010; Domadenik et al., 2013). However, most studies discuss the *quantity* and *type* of study as being interrelated under the topic of overeducation. There are two reasons for this: first, the empirical findings show that those who work outside their field of study are also more likely to suffer from a higher risk of being overeducated (Croce & Ghignoni, 2015), and, secondly, differentiating these two concepts seems to be too complex.

Desjardins and Rubenson (2011) stated that it is quite difficult to determine horizontal mismatch for several reasons. Firstly, some job positions cannot be matched with a specific field of study, such as managers and politicians. Secondly, this concept is quite vague and is not suitable for the general field of study that focuses on general skills that are transferable in the job market compared to the skill gained from a specific educational system (such as vocational education).

Conclusion

Topics on job-education mismatch and overeducation, specifically among graduates, have been extensively discussed. However, the discussion seems to be focused on the incidents, determinants, method of measurement, and the effects of the mismatch but not the concept of mismatch itself. The literature indicates many misconceptions of mismatch and overeducation because these concepts are treated as interchangeable. Moreover, the terminology of overeducation, job mismatch, underutilization, and overqualification is often used arbitrarily. Since the understanding of the concept has theoretical and practical significance, this paper provides an in-depth review of the concept of job mismatch in the labour market and its relationship to overeducation.

The review of the literature indicates two types of mismatch defined by the ILO. The first is the mismatch between the demand and supply of skills by comparing the education of working and unemployed people, and the second mismatch is the job-education mismatch that is the focus of this paper. The latter mismatch can be categorized into two, i.e., vertical and horizontal. The vertical mismatch can be further divided into skills and education mismatch, and each type of

mismatch can be further categorized as over, under, or matched. In general, the concept of mismatch is broader in scope when skills are considered, and it is interesting to note that overeducation is only a subset of the job-education mismatch concept and a small part in this area of study. Based on the finding, it is therefore critical for any researcher to properly define the scope of the study to avoid any confusion and reach conclusive findings for relevant policy recommendations.

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