The Incidence and Consequences of Skill Mismatch Among Higher Education Graduates in Saudi Arabia

Mohammed Ali Alzubaidi

Assistant Professor of Economics of Education

Faculty of Educational Graduate Studies, King Abdulaziz University,

Saudi Arabia

Abstract. Skill mismatch has been reported to be a pervasive problem in many countries, in which increasing numbers of individuals are working in jobs that do not require the skills they have. In addition to the potential waste and misallocation of valuable human capital, skill mismatch has been found to lead to negative consequences for the overskilled individuals, their organisations, and the larger economy. This paper examines the incidence and consequences of skill mismatch on job and career attitudes among a sample of 438 higher education graduates in Saudi Arabia, where relatively little is known about this phenomenon and its correlates. The results provide support for the assumption that skill mismatch is prevalent in Saudi Arabia, whereby many graduates in the study reported being overskilled for their jobs which do not require or fully utilise their acquired skills, abilities, and experiences. Furthermore, consistent with expectations, the results of the hierarchical linear regressions suggest that overskilling, as a state of person—job misfit, is negatively related to job satisfaction, affective commitment, and career satisfaction; and positively related to turnover cognitions and careerism, even after controlling for potential confounders. The paper concludes with a discussion of the study implications for theory and practice.

Keywords. Skill mismatch; overskilling; skill utilisation; job attitudes; career attitudes; graduates; Saudi Arabia

JEL Classification. I21; J24; J28

1. Introduction

Skill mismatch—the level of discrepancy between an individual's skills and capabilities and those needed or required for their job (Allen & De Weert, 2007; Badillo-Amador et al., 2005)—has been reported to be a common experience among employees in many countries (Ferreira et al., 2017; Budría & Moro-Egido, 2018; McGuinness et al., 2018). While the exact figures of the incidence of skill mismatch are still not known in many countries as compared to those of educational mismatch, skill mismatch is a similarly serious problem for both developed and developing economies.

Estimates of overskilling among graduates in several European countries range from about 15% to 47%, with average incidence between 28% and 39% (Cedefop, 2018; McGuinness et al., 2018). Such incidence rates may indicate that a substantial proportion of employees are not sufficiently integrated into the national economy. Overskilling implies a waste of valuable resources and suboptimal allocation and utilisation of graduates in the labour market (McGuinness, 2006).

Moreover, because overskilled employees lack the opportunity to fully utilise their skills on the job and realise their full potential, they may feel that their ability to meet their job and

career needs and aspirations is hindered (Wassermann et al., 2017). Similar to other labour market mismatches, skill mismatch, or overskilling in particular, has been hypothesised by researchers to lead to various negative consequences (Feldman, McKee-Ryan et al., 2009). In fact, the findings from several studies provide evidence on the negative consequences of skill mismatch for the employees themselves, the organisation in which they work, and for the society (O'Brien, 1980; Burris, 1983; Bolino & Feldman, 2000a, 2000b; Feldman et al., 2002; Green & Zhu, **McGuinness** & Sloane. Mavromaras et al., 2015). Therefore, increasing attention from labour economists, sociologists, psychologists, and organisational management researchers has recently been devoted to studying the experience of these employees who perceive their job as a poor fit and are unable to put their full potential and skills into use (Rohrbach-Schmidt & Tiemann, 2016; Bickes et al., 2019).

However, to date, relatively little is known about the prevalence and effects of skill mismatch in non-developed countries. Because of the scarcity of research, the current in-depth understanding of this phenomenon and its correlates in such a high-income developing country as Saudi Arabia is still inadequate. More importantly perhaps, given the high unemployment rate among higher education graduates in Saudi Arabia, as compared to developed or even other developing nations,¹ many Saudis might be vulnerable employment that does not match their education or skills to avoid unemployment. For many Saudi graduates, a university degree may not always lead to employment in a comparable job, but rather, if not unemployment, to employment in jobs which do not require or

fully utilise the skill they obtained (Feldman & Turnley, 1996; Alzubaidi, 2020). Additionally, the findings of at least two studies provide signs of high incidence of skill mismatch in Saudi Arabia and justify further research of mismatching. Al-Yahya (2010) and Alzubaidi and O'Toole (2015) reported that large proportions (35% to 46%) of Saudis holding different job positions generally underutilised in some way by their jobs compared with the skills they had. Given that a sizable fraction of the Saudi workforce are expected be overskilled, it is then crucial to further understand the skill matching process in the Saudi labour market.

This paper, then, aims to extend the research on skill mismatch by examining its incidence and potential consequences on job and career attitudes among Saudi graduates. The focus is on the incidence of overskilling along with its impact on job satisfaction, affective commitment, turnover cognitions, career satisfaction, and careerism. Drawing on person-job fit theory (P-J fit; Edwards, 1991) and findings of previous research for producing testable hypotheses, this study posits that skill mismatch is prevent among Saudi graduates and it has negative effects on graduates' attitudes toward their jobs and careers. This study contributes to the current literature by focusing on the largely overlooked problem of skill mismatch in the Saudi labour market and by investigating the relative consequences of being overskilled in terms of important, but rarely examined, job and career outcomes. The paper begins with an overview of the theoretical and empirical literature, whereby the study's hypotheses about prevalence the consequences of skill mismatch among Saudi graduates are developed. Then, the research methodology and data used to conduct the study

between the age of 20 and 29 years, and 58% hold a bachelor's degree (General Authority for Statistics, 2020).

¹ According to the latest labour market statistics, the Saudis unemployment rate was 11.8% in the first quarter of 2020. Of the total of unemployed Saudis, 63% were

are described, followed by a presentation and discussion of the study results. Finally, the paper concludes by outlining the study limitations, directions for future research, and policy and practice implications for improving employee skill match or utilisation.

2. Background and hypotheses

2.1. Conceptualisation and measurement of skill mismatch

As compared to other types of job mismatch, skill mismatch has received relatively little focus in the scholarly literature. Thus, the literature on skill mismatch, while growing recently, is still quite limited (see McGuinness & Sloane, 2011; Quintini, 2011; Di Paolo & Mañé, 2016; McGuinness et al., 2018).² The employment situation in which individuals' skills, abilities, or experiences are not required by or technically utilised on the job has been defined and described in a number of ways and with different terminology including skill mismatch. skill underutilisation, overskilling, and skill surplus (O'Brien, 1980; Burris, 1983; Kahn & Morrow, 1991; G. Johnson & W. Johnson, 1994; Green et al., 2002; Wilkins, 2007; Addy et al., 2012). For instance, G. Johnson and W. Johnson (1994) view skill underutilisation as both "perceptions of minimum opportunity for skill use and minimum use of skills in the present job" (p. 131). Additionally, McGuinness and colleagues (e.g., **McGuinness** & Sloane. 2011; Mavromaras & McGuinness, 2012) have defined overskilling, which they consider a form of skill mismatch, as the situation wherein

employees report that their skills knowledge are not fully utilised in their work. According O'Brien to (1980),skill underutilisation refers to the degree of mismatch or incongruence between individual's skills and the available opportunity to use these skills in their work role. Some studies (e.g., Green & McIntosh, 2007; Roh et al., 2014) have described skill mismatch as the situation where an individual has superfluous skills, knowledge, abilities, or experience relative to what is required by their job. In general, skill mismatch can refer to any type (or the extent) of inadequate or insufficient use of one's skills, abilities, experiences, or other relevant credentials in the job, and it arises when their acquired skills exceed the skills actually required or needed for the job (i.e., a condition of surplus skills or overskilling; Quintini, 2011; Flisi et al., 2017).³

Measurement of skill mismatch has proven to be complex. Theoretically, skill mismatch can be measured both objectively and subjectively. Ideally, one would need to measure the relevant bundle of skills actually acquired by each individual as well as the extent to which these skills are required or used in their current job. By comparing the two, one would obtain an objective or external measure that would provide a reasonable view of skill mismatch on a given job. This approach, however, is very costly and rarely feasible (Badillo-Amador et al., 2005). Therefore, skill mismatch has been typically, and maybe exclusively, measured subjectively through workers' self-assessment, whereby individuals are asked, on a rating scale, to indicate the

than those required by the job) and *downward skill mismatch* (underskilling; having less skills than those required by the job), the latter is not common and outside the scope of this study. Thus, the term *skill mismatch* in this study, strictly refers to upward skill mismatch, overskilling, or skill underutilisation.

² Prior research has mainly focused on education mismatch (i.e., overeducation; being qualified to a higher education level than that which is strictly required by the job; Green et al., 2002) or broadly on underemployment (i.e., having a job that is somehow inferior or of lower quality by some standard; see Feldman, 1966).

³ Although skill mismatch naturally includes both *upward skill mismatch* (overskilling; having more skills

extent to which their job requires the use of all or some of their skills and abilities. Individuals can then be classified as skill mismatched (overskilled or underutilised) or skill matched (adequately utilised) based on their own evaluations (Meroni & Vera-Toscano, 2017; McGuinness et al., 2018). Nevertheless, the questions asked to respondents have varied widely across studies based on the particular operationalisation of skill mismatch adopted.

The vast majority of studies have used either a single or multiple-item rating scale to measure the overall incidence of skill mismatch or underutilisation (e.g., O'Brien, 1980; Feldman & Turnley, 1995; G. Johnson & W. Johnson, 1995; Allen & van der Velden, 2001; Feldman et al., 2002; Green & McIntosh, 2002; Morrison et al., 2005; Mavromaras et al., 2010). According to some scholars (e.g., Romero & Salinas-Jiménez, 2017; McGuinness et al., 2018), a common problem of this global measurement method is which skills are being considered when measuring skill mismatch. To avoid potentially biased estimates resulting from respondents considering the skills that are not related to the work they do when responding to the question, 4 some studies have alternatively measured the extent to which a number of specific work-related skills are being utilised or required by one's job (e.g., cognitive, technical, and workplace skills; Bolino & Feldman, 2000a; Feldman & Bolino, 2000; McKee-Ryan et al., 2009; OECD, 2013; Cedefop, 2015; Romero & Salinas-Jiménez, 2017; Kim & Choi, 2018). Such measurement of specific skill mismatch might be a more accurate indicator of the mismatch on the given job because it accurately reflects the job's skill content. Besides, it often provides useful information on which specific skills or clusters of skills are most or least utilised (Mavromaras

McGuinness, 2012). However, this method may only yield a partial picture of the overall incidence of skill mismatch (Quintini, 2011), and is rarely relevant or applicable beyond the corresponding group of workers, making it of limited use. Overall, despite its inherently indisputable limitations and biases, subjective measure is arguably the best available measurement method of skill mismatch. The following sections review the literature on the prevalence and consequences of skill mismatch to form the study hypotheses.

2.2. Incidence of skill mismatch

Previous research has primarily focused on the impact of skill mismatch on individuals' attitudes and behaviours, often without providing additional information about its prevalence among the studied samples. In addition, some studies have confused skill mismatch with education mismatch in terms of both definition and underlying measurement (Allen & van der Velden, 2001; Luksyte & Spitzmueller, 2011). This has considerable ambiguity around the situations in which skill mismatch occurs and made it difficult to identify and investigate its incidence in literature. Even when explicitly reported, skill mismatch estimates are often difficult to interpret and compare, because they are mostly based on subjective measures that are scored on an ordinal scale and that vary considerably across data sources. It is not surprising, therefore, that there is a lack of consensus around the prevalence of skill mismatch, with the rates of the incidence varying largely across countries (Wilkins & Wooden, 2011).

In general, however, available evidence, mostly for western economies, suggests that skill mismatch is becoming pervasive in several countries. An increasing proportion of

⁴ Such as non-cognitive and behavioural skills (e.g., personal skills and interests) that are irrelevant to their jobs (Romero & Salinas-Jiménez, 2017).

individuals are working in jobs that demand fewer skills than they have and do not make full utilisation of their potential (Livingstone, 2019). Figure 1 shows the incidence of overskilling in a number of selected European and Arab countries based on various sources and years. It shows that skill mismatch, overskilling in particular, is widespread among individuals in the labour markets, with estimates in some countries reaching nearly 50% of the studied populations. For example, according to Cedefop (2018), about 39% of European employees are estimated to be overskilled in their jobs. Additionally, McGuinness et al. (2018), in their meta-analysis

of 22 studies on skill mismatch across 30 developed countries, found that the average incidence of overskilling, based on 55 subjective estimates, was 27.5%, with estimates ranging from 4.3% in Norway to 47% in Greece. Ferreira et al. (2017) examined skill mismatch among a sample of working individuals (37,285 full-time employees) at the start of their jobs in 28 European countries and found that 51% reported being initially skill matched. 24% reported being initially underskilled, and 25% reported being initially overskilled (see also Budría and Moro-Egido, 2018).

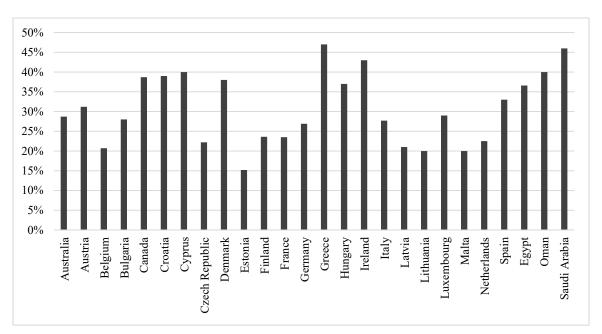


Figure 1. Overskilling in selected European and Arab countries, various years. Data for Canada are based on the average incidence of overskilling generated from the estimates reported by Krahn and Lowe (1998) and Livingstone (2019); data for Spain are based on the estimates reported by Badillo-Amador et al. (2005); data for Egypt are based on Morsy and Mukasa (2019); data for Oman and Saudi Arabia are based on the average estimates reported by Al-Yahya (2010); data for other European countries are based on the estimates reported by McGuinness et al. (2018).

Looking at the country level data, Green and McIntosh (2007) examined skill mismatch in Britain using the 2001 Skill Survey and reported that 35% of UK workers were overskilled. Moreover, the studies of Mavromaras and McGuinness along with several other colleagues, have provided

evidence of extensive overskilling among employees in the Australian and UK labour markets. For instance, using survey data collected from two samples of Australia and UK workers, Mavromaras et al. (2010) observed that 14% and 30% of Australian workers were severely and moderately

overskilled, respectively. The respective proportions for the UK sample were 21% and 33%. Focusing on UK graduates, McGuinness and Sloane (2011) reported that 33% of employed individuals felt that their skills were not fully utilised in their initial job; the figure fell to 14% for the current job. Mavromaras and McGuinness (2012) also found that, of the total of 42,255 Australian employees, 15% were severely overskilled, 29% were moderately overskilled, and 56% were well-matched (see also Mavromaras et al., 2009; McGuinness et al., 2015).

Similar results were reported in Spain by Badillo-Amador et al. (2005) who found that about 33% of Spanish workers were overly competent for their jobs. Di Paolo and Mañé (2016) reported quite similar results on PhD graduates in Spain. They found that 28% of the graduates (276 out of 1002) considered their PhD-specific skills to be unnecessary for performing their job, reflecting a considerable level of overskilling. In Germany, Rohrbach-Schmidt and Tiemann (2016) observed that about 13% of the paid workers who responded to the 2006 Employment Survey (2395 out of 18,333) were overskilled (i.e., felt that they were underchallenged by the requirements of the job relative to their skills and knowledge). In the Netherlands, skill underutilisation was also found to influence about 15% of tertiary vocational graduates and 14% of university graduates (Allen & van der Velden, 2001). In a study of Canadian workers, Livingstone (2019) indicated that 51% of the Canadian employed labour force in 2014 and 44% in 2016 reported having skills to do more demanding duties than their current ones. Likewise, Cabral Vieira (2005) observed a high incidence of skill mismatch in Portugal by which 47% of Portuguese employees felt that their skills were underutilised in their current jobs. It is arguable,

therefore, that skill mismatch has become a matter of growing concern in the labour force of many developed economies, and one that affects a broad proportion of the labour force and not only tertiary graduates.

Empirical evidence on skill mismatch for non-developed countries is very sparse. However, some researchers suggest that skill mismatch is likely to be even higher in developing countries as compared to the more developed ones, due to the relatively lower inefficiency of their job markets (McGuinness et al., 2018; Alzubaidi & O'Toole, 2015). Available review studies have suggested that the average incidence of overskilling in developing countries is around 29% (Groot & van den Brink, 2000; McGuinness, 2006; Cedefop, 2010). Morsy and Mukasa (2019) provided evidence of prevalent skill mismatch in a number of African countries. On average, 46% of the employed youth in the study perceived their skills to be mismatched with the requirements of the current job, of which around 18% felt overskilled while 29% experienced underskilling (skill deficits). The highest incidence of overskilling was found in Egypt (37%), while the smallest shares of overskilled youth were found in Benin, Liberia, and Uganda (10%).

In the case of Saudi Arabia, there is some evidence that skill mismatch might be significant among Saudi nationals (Al-Yahya, 2010; Alzubaidi & O'Toole, 2015; Alzubaidi, 2016). For example, Al-Yahya (2010) found that skill underutilisation averaged 46% among 390 managers and civil servants from different goverment agencies in Saudi Arabia. Moreover, in a recent study of competence utilisation among 566 Saudi foreign-educated academics working in Saudi universities, Alzubaidi and O'Toole (2015) found that 35% of academics reported low utilisation, 44%

⁵ In the same study skill underutilisation averaged 40% in Oman (N = 150).

reported medium utilisation, and only 21% reported high competence utilisation. Although the generalisation of these studies' results to all Saudi graduates in the labour market might be limited due to the specificity of their samples, they provide suggestive evidence that a large proportion of Saudi graduates are likely to be overskilled and working in jobs in which their skills, experiences, and abilities are not adequately utilised. Based on this rationale, the following hypothesis is proposed.

Hypothesis 1: Skill mismatch is prevalent among Saudi graduates in the labour market. That is, a large proportion of Saudi graduates are likely to be overskilled for their jobs.

2.3. Consequences of skill mismatch

Over the past years, an increasing number of studies have examined the potential consequences of skill mismatch. As is the case with other forms of job mismatch, researchers (e.g., Feldman, 1996; G. Johnson & W. Johnson 1996; Bolino & Feldman, 2000a; Green & Zhu, McKee-Ryan 2010; & Harvey, Mavromaras et al., 2015) have suggested several negative consequences for those individuals who have surplus skills, abilities, or experiences that are not fully utilised or required by the job. Person-job fit theory (P-J fit: Edwards, 1991) is one theoretical perspective often drawn on by researchers to support the negative impacts of occupational mismatch (education and skill mismatches) on personal, job, and career attitudes (e.g. Feldman et al., 2002; Erdogan & Bauer, 2011; McKee-Ryan & Harvey, 2011). P-J fit refers to the congruence between the characteristics of a person and those of their job. It suggests that a lesser degree of fit between a person and their job leads to more negative work outcomes

(Edwards, 1991; Kristof-Brown et al., 2005). Skill mismatch represents both a misfit between a person's abilities (e.g., knowledge, skills, and experiences) and the job demands (e.g., requirements) and a misfit between a person's needs (e.g., goals, preferences, and aspirations) and the supplies offered by the job (e.g., qualities, conditions, challenging tasks). It, thus, should result in negative consequences in terms of job and career outcomes (Edwards, 1991; Cable & Edwards, 2004; Maynard et al., 2006; Luksyte & Spitzmueller, 2011; Tian et al., 2018). This study focuses on the effects of being underutilised or overskilled on job and career attitudes as indicators of individual consequences of skill mismatch.

2.3.1. Job attitudes

Skill mismatch has been suggested to lead to several negative job attitudes. However, with the exception of job satisfaction, the empirical evidence for most of the predicted negative ramifications is still lacking in the literature. Overall though, the reported findings have suggested that overskilled individuals are likely to be less satisfied with their jobs, feel less emotionally attached to their organisations, and express intentions to leave their jobs (Feldman, 1996; Feldman et al., 2002; Mavromaras et al., 2010; McKee-Ryan et al., 2011). For example, in a series of studies by O'Brien and his colleagues in Australia (e.g., O'Brien, 1980, 1982; Humphrys & O'Brien, 1986), skill utilisation was frequently found to be the strongest predictor of overall and facet job satisfaction compared to other job attributes. Several recent studies in Australia also reported a negative relationship between perceived skill utilisation and job satisfaction among different working groups, including factory workers, skilled migrants, and the general working-age

⁶ The incidence and importance of skill mismatch are more likely to vary considerably among different groups in the labour market (see Mavromaras et al., 2007).

population (e.g., Mavromaras et al., 2015; Morrison et al., 2015; Tian et al., 2018). Moreover, both Green and Zhu (2010) and McGuinness and Sloane (2011) reported that overskilling was associated with a lower probability of being satisfied with the job among UK graduates. In Spain, Badillo-Amador, et al. (2012) and Romero and Salinas-Jiménez, (2017) reported similar results regarding the negative effect of skill mismatch on job satisfaction. Vansteenkiste et al. (2015) found skill underutilisation to lead to more negative job attitudes in terms of higher turnover intentions among re-employed Flemish individuals.

Additionally, Burris (1983) found that underemployment, assessed in terms of skill underutilisation, was negatively related to job satisfaction and intentions to leave among American clerical workers. Furthermore, in their study of American public utility workers, G. Johnson and W. Johnson (1995) found a significant negative relationship between skill underutilisation and job satisfaction, even after controlling for age, education, job tenure, and income. Along similar lines, Feldman and Bolino (2000) found that skill utilisation, measured as the extent to which one uses eight specific skills relevant to overseas assignments, was positively associated with job satisfaction and organisational commitment, even after controlling for gender, age, cultural distance, and previous overseas experience. In another study of American expatriates using the same measure of specific skill utilisation, Bolino and Feldman (2000a) found that the use of supervisory, administrative, communication, decision-making and skills were all significantly positively iob related to satisfaction, affective commitment, and intention to finish overseas assignments.7 In a

study of re-employed laid-off executives in the north-eastern United States, Feldman et al. (2002) reported that perceptions of skill underutilisation relative to previous jobs were associated with lower levels of job satisfaction and affective commitment and with active job search. In a similar vein, McKee-Ryan et al. (2009) found that underutilisation of 11 specific skills (e.g., technical skills, finance and budgeting skills, and problem-solving skills) was significantly associated with lower affective commitment and with higher intentions to quit among re-employed laid-off technical workers in the south-central United States. Feldman and Turnley's (1995) results revealed that recent graduates in the United States, who perceived themselves to be underutilised, were more likely than their peers, who felt well utilised, to actively search for another job, or report intentions to search for a job.

In addition to the above studies conducted in western countries, a few other studies conducted in Middle Eastern contexts provide support for the adverse effects of skill mismatch on job attitudes. For instance, Meir et al. (1990) found that skill utilisation was significantly positively correlated with job satisfaction among Jewish primary school teachers in Israel. Al-Yahya (2010) also found a significant positive relationship between competence utilisation and job satisfaction among managers working in different Saudi and Omani public organisations. Likewise, Alzubaidi O'Toole (2015) found overall competence underutilisation among foreign-trained faculty members in Saudi Arabia to be negatively related to job attitudes including lower job satisfaction and organisational commitment and higher turnover intentions, even after controlling for several demographic variables.

affective commitment and intent to finish. Use of knowledge of international business and negotiation skill was also positively related to affective commitment.

⁷Among the other eight specific skills, Bolino and Feldman (2000a) found that the use of technical/functional skills was significantly related to

As previously mentioned, the negative effects of skill mismatch on job attitudes can be explained by the P-J fit theory, which importance emphasises the the complementary fit between the characteristics of the individuals and those of the job in fulfilling the needs of that individual (Edwards, 1991; Kristof- Brown et al., 2005). Given that most graduates come to the job with certain expectations and needs in terms of the extrinsic and intrinsic rewards from their jobs (e.g., salary, growth opportunities, and feeling of accomplishment and meaning), they expect to find a job in which they can fully utilise their skills and abilities to satisfy such needs. When overskilled individuals find themselves in jobs that do not require their repertoire of skills or jobs that do not fulfill their expectations and needs, they feel unchallenged, frustrated, and unsettled on the job; hence, they become dissatisfied with their jobs, feel less emotionally attached to their organisations, and think more of quitting the job (O'Brien, 1982; Khan & Morrow, 1991; Feldman, 1996; Lee, 2005). Thus, based on P-J fit theory and the previous research described above, negative relationships are posited between skill mismatch and job attitudes among Saudi graduates. This leads to the following hypothesis.

Hypothesis 2: Skill mismatch among Saudi graduates has negative effects on job attitudes. That is, overskilling is negatively related to job satisfaction (2a), negatively related to affective commitment (2b), and positively related to turnover cognitions (2c).

2.3.2. Career attitudes

The literature on skill mismatch as a significant determinant of career attitudes is very limited and less direct. Nonetheless, in addition to the specific job attitudes, the negative impact of skill mismatch may extend

to one's wider career as well. Overskilled employees may encounter a discrepancy between their current situation and their desired career as their job does not offer sufficient opportunities for skill utilisation, challenging work, or career advancement (Anderson & Winefield, 2011). Feldman (1996) postulated that underemployment dimensions, including skill underutilisation, should lead to negative attitudes toward one's career. Particularly, when an individual finds themselves in a job which does not require or fully utilise their skills, they become frustrated with their career, lose interest in hard work, and rely on nonperformance-based behaviours networking, self-presentation strategies, image management, etc.) for getting ahead in organisations, rather than objective performance indicators (Feldman, 1996; Lee, 2005).

Moreover, a limited number of studies found associations between skill mismatch and career attitudes, including career satisfaction and careerism, highlighting the career penalties for those overskilled. For example, Feldman and Weitz (1991) found that graduates, who perceived themselves to be in jobs that do not utilise their skills, were likely to have negative attitudes toward their careers and to adopt careerist behaviours, as they become sceptical about the link between hard work and career advancement. Feldman and Turnley (1995), in a study of recent business graduates, found careerist attitudes to be more prominent among graduates working in a job that did not utilise their skills adequately. Extending on this, Lee (2005) found skill underutilisation to have a significant negative influence on career satisfaction. Ren et al. reported that perceived (2013)skill underutilisation among former expatriates was related to lower perceived career success. Bolino and Feldman (2000b) also found skill underutilisation to be significantly positively

related to expatriates' careerist attitudes (see also Feldman et al., 2002).

Drawing on P-J fit theory, and following the same logic as for the negative impacts of skill mismatch on job attitudes, it is reasonable to predict that the lack of skill utilisation in a job would lead to poorer career attitudes toward work. Given that career attitudes depend largely on whether one's career needs, goals, and expectations for challenging work are met, experience overskilled individuals. who discrepancies between their current situation and their optimal (or desired) one in terms of job demands, challenges, or supplies relative to their abilities or needs, are likely to feel less satisfied with careers and to develop careerist attitudes due to these discrepancies (Khan & Morrow, 1991; Feldman et al., 2002; Erdogan & Bauer, 2011). Saudi graduates are, then, expected to have negative career attitudes when they are not given the chance to fully utilise their skills or experience and satisfy such expectations and needs. Accordingly, the following hypothesis is formed.

Hypothesis 3: Skill mismatch among Saudi graduates has negative effects on career attitudes. That is, overskilling is negatively related to career satisfaction (3a) and positively related to careerism (3b).

3. Methods

3.1. Participants

Saudi nationals (N=438) working in a fulltime paid job served as participants of the study. The participants were 25.6% women and 74.4% men. The age of the participants ranged from 20 to 77 years, with a mean age of 34.49 years (SD=8.85 years). The majority of the participants were from Makkah province (56.8%), and the remaining participants were from Riyadh

(21.5%) or other provinces (21.7%). More than half of the participants (53.6%) had a bachelor's degree, 21.5% had a higher diploma or master's degree, 16.4% had a doctorate or equivalent, and 8.4% had a post-secondary diploma. Participants' fields of study included social sciences (28.8%); science, mathematics, and computing (17.6%); education (15.1%); humanities and arts (13.5%); engineering, manufacturing, and construction (11.9%); health sciences (7.8%); and other fields (5.5%). Nearly half of the participants had obtained their highest education level in 2016 or later, 28.5% between 2011 and 2015, 12.8% between 2006 and 2010, and 12.6% in 2005 or earlier. Half of the participants (50.7%) worked in the private sector, 43.8% in the public sector, and 5.5% in other sectors, with most of them being employed in a permanent job (61.4%). More than half of the participants had less than 5 years of work experience at their current job (55.7%) and a monthly salary of less than SR10,000 (56.6%).

3.2. Procedure

An online survey constructed by the author was administrated to Saudi alumni of a public university in the western region of Saudi Arabia (Makkah Province). With the help of the Alumni Unit, which is responsible for managing and regulating the data and affairs of the university alumni, potential participants were recruited from the university alumni database. One thousand alumni were randomly selected from the database and sent an e-mail invitation containing the survey link and requesting the voluntary participation of Saudi graduates who are in full-time employment. All required permissions to reproduce the existing measures in the study were obtained before the conduct of the study.8 survey introductory page included The

back-translation conducted by two independent bilingual translators was used to produce the Arabic version.

⁸ The survey was offered to participants in Arabic. Where no validated Arabic version of the scale was available, a

information about the study purpose, an informed consent statement, and a mandatory checkbox for participants to provide their consent to participate in the study prior to starting the survey. Of those graduates to whom the survey was sent, 489 eligible Saudi graduates responded and started the survey; of those responses, 438 were usable and valid for analysis.

3.3 Variables and measures

Skill mismatch

Skill mismatch or overskilling was assessed using the 3-item Scale of Abilities and Skills Underutilisation developed by Caplan et al. (1975). The scale assesses the lack of opportunity one has on the job to use the knowledge, skills, and abilities from their previous experience and training, and to do the things they do best. A sample item is "How often does your job let you use the skills and knowledge you learned in school/education?" Responses were recorded on a 5-point Likert-type scale, ranging from 1 (always) to 5 (never), to yield a summed score of skill mismatch, with higher scores reflecting higher overskilling. Cronbach's alpha coefficient (α) was .86.

Job satisfaction

Job satisfaction was measured with the 3-item Scale of Global Job Satisfaction developed by Cammann et al. (1983). The scale taps the extent to which one is generally satisfied with their job. A sample item is "In general, I like working here." Responses were collected on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores reflecting greater overall satisfaction with the job. Cronbach's alpha coefficient (a) was .84.

Affective commitment

Affective commitment was assessed using the revised 6-item Scale of Affective Commitment (Meyer et al., 1993), which measures one's emotional attachment toward the organisation for which they work. A sample item is "I feel 'emotionally attached to this organisation." For the purpose of this study, the three negatively keyed items were reversed to minimise potential confusion for participants. Responses were collected on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating higher affective commitment. Cronbach's alpha coefficient (α) was .93.

Turnover cognitions

Turnover cognitions were assessed using a 3-item scale developed by Adams and Beehr (1998). The scale assesses one's withdrawal cognitions (intention to quit their job). A sample item is "I would like to quite this job and find another in the near future." All items were rated on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores interpreted as higher intentions to leave the job. Cronbach's alpha coefficient (α) was .97.

Career satisfaction

Career satisfaction was measured with the 5-item Scale of Career Satisfaction developed by Greenhaus et al. (1990). A sample item is "I am satisfied with the progress I have made toward meeting my overall career goals." Each item was measured on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating higher career satisfaction. Cronbach's alpha coefficient (α) was .90.

Careerism

Careerist attitudes toward work were measured with 4 items derived from the 7-item Scale of Careerism by Feldman and Weitz (1991). The scale measures the extent to which one believes that their career advancement and success in organisations is based on nonperformance-based factors (e.g., networking, self-presentation strategies, and management) rather than on objective job performance indicators (e.g., competence, merit, and loyalty; Bolino & Feldman, 2000b; Feldman, et al., 2002). A sample item is "It is hard to get ahead in an organisation on sheer merit alone." The items were rated on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating higher levels of careerist attitudes. Cronbach's alpha coefficient (a) was .74.

Covariates

The study deliberately controlled for six covariates that were expected to influence the hypothesised relationships between skill mismatch and the outcomes variables in the multiple regression analysis. These include age, education level, sector, job contract, work experience, and salary. These variables were chosen as controls in the regression analysis because they were found to be significant correlates of skill mismatch or the outcome variables. Besides, most of these variables have been shown in previous research to be important covariates of the relationship between skill utilisation and several of the

current outcome variables (Feldman & Bolino, 2000; Feldman et al., 2002; Alzubaidi & O'Toole, 2015). Age was measured in years, while education level, sector, and job contract were recorded as dichotomous variables for the regression analyses. Work experience and salary were measured at ordinal levels—5 levels and 7 levels, respectively—and treated as contentious variables in the regression analyses.

3.3. Statistical analyses

Different statistical analyses were used to test the hypotheses of the study. Descriptive analysis was used to assess the prevalence of skill mismatch among Saudi graduates. The degree of skill mismatch was determined for each subject by averaging the scale items, generating an actual range from 1 to 5. For comparison purposes and further interpretation of the results, the skill mismatch scale was collapsed into a corresponding two-category variable using the median split approach (i.e., midway cut-off). That is, using the median score as a cut-off point,9 participants scoring a mean score of 3 or more on the scale were classified as "overskilled" (skill mismatched or underutilised), and those scoring a mean score of less than 3 were classified as "matched" (skill matched or well-utilised). Furthermore, in addition to correlational analysis, a series of five hierarchical multiple regressions were used to test the hypotheses regarding the impact of skill mismatch on job and career attitudes, while controlling for the six above-mentioned covariates (see Table 1 for details on these covariates).

derived from the 9-item Scale of Perceived Overqualification (SPOQ; Maynard et al., 2006) and was scored on a 2-point scale (yes = 1, no = 0). The use of the precise cut-off point is consistent with existing research (Mavromaras & McGuinness, 2012; Meroni & Vera-Toscano, 2017).

⁹ Sensitivity tests, using Receiver Operator Characteristics (ROC) curve and an overskilling binary variable as a state variable, confirmed that the median cut-off point for skill mismatch was appropriate (i.e., the optimum cut-off point on the scale). This state variable was assessed using responses to the item "I have more skills and abilities than I need to do my job," which is

Table 1. Means, standard deviations, and intercorrelations among key variables of the study

Measures	;					•										
	<	M	QS	-	2	33	4	5	9	7	∞	6	10	11	12	13
1. Gender	438	ı	ı	-												
2. Age	438	34.49	8.850	.018	-											
3. Education level	438	ı		.125**	.466**	-										
4. Sector	438		1	.023	401 **	463**	1									
5. Job contract	438			024	331**	320**	44. *	-								
6. Work experience	438	1.852	1.202	058	**089	.304**	407**	371**	-							
7. Salary	438	438 2.740 1.786	1.786	023	.614**	.602**	472**	518**	.551**	1						
8. Skill mismatch	438	2.90	1.036	080	297**	162**	.268**	.236**	244**	360**	1					
9. Job satisfaction	397	3.244	1.096	010	.344**	.271**	340**	364**	.314**	.431**	592**	-				
10. Affective commitment	397	2.95	1.245	038	.282**	.248**	368**	325**	.290**	.285**	531**	**449.	1			
11. Turnover cognitions	397	3.538	1.234	021	363**	316**	437**	.412**	332**	469**	.497**	**699	630**	1		
12. Career satisfaction	397	3.302	1.050	.053	.244	.262**	.045	171**	.159**	.316**	443**	.495**	.445**	370**	_	
13. Careerism	397	397 3.463	.792	093	070	.020	182**	006**	061	040	.276**	305**	231**	.320**	288**	-

Note. N = 438. All correlation coefficients are rounded to three decimal places; gender is coded as 0 = man, 1 = woman; educational level is coded as 0 = permanent job, 1 = temporary or contract job. Age is measured in years; work experience and salary are measured at and at an inclusive temporary or contract job. Age is measured in years; work experience and salary are measured at ordinal level (5 levels and 7 levels, respectively) and treated as contentious variables. ${}^*p < .05, {}^{**}p < .01$.

4. Results

4.1. Incidence of skill mismatch

Table 1 presents the descriptive statistics and intercorrelations among the study variables. The figures indicated that skill mismatch is prevalent among the analysed sample (M = 2.90, SD = 1.036). Additionally, using the median cut-off point to dichotomize skill mismatch, Figure 2 reports the incidence of skill mismatch (mid-cut) for the analysed sample. Of the 438 Saudi graduates, 52.5% (230) were overskilled in their current job,

while 47.5% (208) were well-matched. Thus, the results showed that a large proportion of Saudi graduates in the current study (more than half) reported being skill mismatched, revealing a significant deficit in skill utilisation, or an incidence of severe overskilling, among Saudis in the labour market. Hypothesis 1, then, was supported; skill mismatch was prevalent among Saudi graduates, such that many graduates were working in jobs that did not allow for full utilisation of their skills, experiences, and abilities.

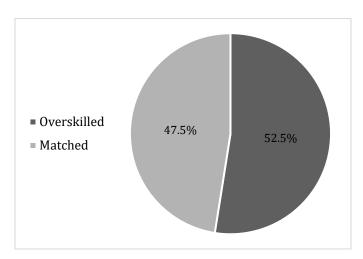


Figure 2. Incidence of skill mismatch (mid-cut), N = 439.

Moreover, looking at the relationships between skill mismatch and the demographic variables, some interesting findings emerged. Skill mismatch was significantly negatively related to age, educational level, work experience, and salary, while significantly positively related to sector and job contract (see Table 1). In particular, younger participants, participants with lower education levels (i.e., secondary school), less work experience (i.e., less than 5 years), or lower salaries (i.e., less than SR 5,000) were more likely to be mismatched. Participants who were in the private sector or holding a temporary or

contract job were also more likely to have higher levels of skill mismatch as compared to those in the public sector or holding a permanent job.

Overall, these results generally provide additional support for the evidence reported by Al-Yahya (2010) and Alzubaidi and O'Toole (2015) that skill mismatch is widespread in Saudi Arabia and that policymakers should be more concerned with such an important deficiency in the labour market. The results expose a disturbing deficit in skill utilisation among graduates, whereby many reported that their skills, abilities, and previous experiences

were not fully utilised. There are two possible explanations for the high observed incidence of overskilling among Saudi employees in the workplace. The first explanation is that these overskilled graduates might actually have been overeducated for their jobs in the first place; thus, they had surplus skills that are not demanded or required in the actual performance of the job tasks. This is consistent with the recent results reported by Alzubaidi (2020) who found that, out of 398 Saudi graduates in the study, almost half (51% and 48%) were overeducated for their job based on two different measures. Although overskilling and overeducation have been found by previous studies to be conceptually and empirically distinct phenomena (i.e., neither construct fully captures the extent of the other; skill mismatch versus education mismatch) and that the link between the two is not significantly strong, there is no reason not to believe that graduates who are overeducated are more vulnerable to be overskilled than those who are adequately educated for their job. This line of logic, however, does not mean that all overeducated graduates should be overskilled (see Allen & van der Velden, 2001; Green et al., 2002; McGuinness, 2006; Green & Zhu, 2010; Mavromaras et al., 2015; Di Paolo & Mañé, 2016).

The second possible explanation is that skill mismatch, or overskilling, might be an inherent problem in the Saudi labour market. This argument is supported by Al-Yahya's (2010) conclusion that work organisations in Saudi Arabia, especially public ones, invariably fail to deploy and effectively utilise the skills, knowledge, and experiences of their competent employees, who are rarely empowered or have the sufficient opportunities to apply their acquired competence. It is argued that human capital development policies and practices in Saudi Arabia focus mainly on developing and

upgrading individuals' skills and capacities, while failing to fully harness these human capital assets. In other words, there is an apparent disconnect between skill accumulation by graduates and skill utilisation opportunities available to them (Al-Yahya, 2010; Alzubaidi, 2016). As such, the country, organisations, and graduates themselves stand to potentially lose the benefits of the accumulated skills, abilities, and knowledge of those underutilised or overskilled, not to mention the private and social costs associated with their education. These are just some of the potential detriments that arise from skill mismatch; the current results also suggest that overskilling had further negative consequences graduates and probably for their organisations.

4.2. Consequences of skill mismatch

Significant relationships were anticipated between skill mismatch and the five outcome variables: iob satisfaction. affective commitment, turnover cognitions, satisfaction, and careerism. As shown by the correlation results in Table 1, the predicted relationships were all significant, p < .01, giving initial support for both of the above predictive hypotheses on the consequences of skill mismatch (Hypotheses 2 and 3). The hypotheses were further tested using a series of five hierarchical multiple regressions. Six variables were used as control variables in order to eliminate their possible effects: age, educational level, sector, job contract, work experience, and salary. In each regression equation, the control variables were entered into the equation first (Model 1), and in the second step of each equation, the skill mismatch was entered (Model 2). The results of the regression analyses are presented in Table 2.

Table 2. Hierarchical multiple regression analyses summary for skill mismatch predicting job and career attitudes

						D	Dependent variables	variab	les						
						Job attitudes	rdes					Career attitudes	titudes		
	Job	satisfaction	ion	Affective commitment	e comr	nitment	Turnov	/er cog	Turnover cognitions	Caree	Career satisfaction	action	Cg	Careerism	۵
Steps and independent variables	В	SE B	β	В	SE B	β	В	SE B	β	В	SE B	β	В	SE B	β
Step 1			•												
Age	.002	.007	.020	008	600	054	004	600.	026	.005	800.	.038	002	.007	024
Education level	.055	.117	.024	.038	.124	.015	048	.145	017	*662.	.129	.138*	960.	.107	.058
Sector	122	.105	056	371^{**}	.128	149**	.467***	.130	176***	.077	.116	.037	.027	960.	.017
Job contract	296^{**}	.105	132^{**}	266	.128	089	.414**	.130	.153**	900.	.116	.003	113	960.	070
Work experience	.036	.050	.039	.072	090.	690.	023	.061	021	042	.055	048	012	.045	018
Salary	690.	.038	.112	.074	.046	.0106	106^{*}	.047	143*	.063	.042	.107	.013	.034	.029
R^2	.234***			.205***			.302***			.111**			.013		
F	19.827***			16.710***	*		28.132***	* *		8.118***			.826		
Step 2															
Skill mismatch	507***	.044	481***	487*** .054406***	.054	406***	.434*** .055	.055	.340***	394***	. 049	394*** .049389***	.227*** .041 .298***	.041	298***
R^2	.426***			.341***			.398***			.237***			.086***		
F	41.201 ***			28.793***	*		36.770***	*		17.254***	*		5.240***		
ΔR^2	.192***			.250***			***960			.126***			.074***		
ΔF	130.074***	*		80.783***	*		62.139***	*		64.177***	*		31.335***	*	

Note. N = 438. All correlation coefficients are rounded to three decimal places; gender is coded as 0 = man, 1 = woman; educational level is coded as 0 = permanent job, 1 = temporary or contract job.

The regression results were consistent with the correlational results reported above. The full model, as a predictor of each of the five outcome variables in each regression equation, was statistically significant, p < .001. As predicted by Hypothesis 2 (2a, 2b, and 2c), skill mismatch was significantly negatively related to graduates' job satisfaction ($\beta = -.481$, p <.0005) and affective commitment ($\beta = -.406$, p < .0005), and significantly positively related to their turnover cognitions ($\beta = .340, p < .0005$), even after controlling for the potential effects of the confounding covariates. Consistent with Hypothesis 3 (3a and 3b), skill mismatch also had a significant negative effect on graduates' career satisfaction ($\beta = -.389$, p < .0005) and a significant positive effect on their careerism (B = 298, p < .0005), when the potential confounders were controlled for. Therefore, all hypotheses on the consequences of skill mismatch were supported, and statistically significant results were obtained regarding the predictive impacts on job and career attitudes.

Indeed, skill mismatch was the strongest predictor of each of the outcome variables (i.e., made the strongest unique contribution to the prediction of each outcome variable), and accounted for a statistically significant proportion of additional unique variance in each of the five variables. It uniquely explained an added 19.2% of the variance in job satisfaction (total variance = 42.6%), 25% of the variance in affective commitment (total = 39.8%), 9.6%of the variance in turnover cognitions (total = 39.8.3%), 12.6% of the variance in career satisfaction (total = 23.7%), and 9.6% of the variance in careerism (total = 8.6%). These amounts of variance explained by skill mismatch are fairly respectable, especially when compared to those reported in the literature (e.g., Humphreys & O'Brien, 1980; G. Johnson & W. Johnson, 1995; Feldman & Turnley, 1995; Bolino & Feldman, 2000b; Feldman & Bolino, 2000; Feldman et al., 2000).

Thus, in line with the literature (e.g., Feldman & Weitz, 1991; Feldman & Turnley, 1995; Bolino & Feldman, 2000a, 2000b; Feldman & Bolino, 2000; Allen & van der Velden, 2001; Feldman et al., 2002; Lee, 2005; Badillo-Amador et al., 2012; McKee-Ryan et al., 2009; Green & Zhu, 2010; McGuinness & Sloane, 2011; Alzubaidi & O'Toole, 2015; Tian et al., 2018) and the study hypotheses, the results demonstrate the importance of skill mismatch in predicting job and career attitudes among Saudi graduates. The more overskilled the graduates were (i.e., the more their skills were underutilised on their jobs), the less likely they were to be satisfied with their jobs and careers and affectively committed to their organisations, and the more likely they were to have turnover cognitions and careerist attitudes. As previously articulated, these observed impacts of skill mismatch were predicted by P-J fit theory, which assumes that a lesser degree of fit between the person's characteristics and their job attributes leads to more negative outcomes for the employee and the organisation, including lower job and career attitudes and behaviours (Edwards, 1991; Kristof-Brown et al., 2005).

5. Conclusion

This paper has explored the incidence and consequences of skill mismatch among Saudi graduates. The results provide strong support for the assumption that skill mismatch might be a pervasive problem in Saudi Arabia, where a considerable proportion of graduates in the study (53%) reported being overskilled for their jobs. Moreover, the results also established beyond a reasonable doubt the importance of the skill mismatch as a predictor of individuals' job and career attitudes. Consistent with findings from earlier research and the predictions of P–J fit theory, which was utilised to provide a theoretical base for the study hypotheses, skill mismatch was found to

genuinely exert strong negative effects on job and career attitudes, even after controlling for several confounding variables. As having poor fit between their abilities or needs on one hand and the demands or supplies of the job on the other, overskilled graduates were less likely to be satisfied with their job, emotionally attached to their organisation, and satisfied with their career, while more likely to have turnover cognitions and careerist attitudes. The effects of skill mismatch were not equally strong for all job and career outcomes; skill mismatch had the strongest effect on job satisfaction, while the weakest effect was on careerism.

These results may have important implications for policy and practice, especially in the similarly emerging labour markets. Specifically, there are several ways in which organisations in Saudi Arabia may respond to the problem of skill mismatch and mitigate its negative effects among graduates. However, given that the dynamics and impacts of skill mismatch are more likely to differ among individuals based on the particular conditions under which it is more or less likely to occur, the aim here is to propose the responses that can make a positive impact for graduates and their organisations within the most relevant organisational areas based on the findings of this study and those of previous studies.¹⁰

First, human resources management and practices are a vital area to make the most of the employees' skills in any given job. Appropriate recruitment policies should be in place to ensure that new employees are the right fit for the job, and hence, are likely to bring appropriate skills, attitudes into their roles. Furthermore, there might be a need for a clearly structured and well-articulated career path for employees at the different organisational levels,

with discrete and defined stages on a career ladder, that can act as mediating mechanism for matching the individual's current and future skills with the job demands (Alzubaidi, 2016).

Second, another overriding priority for those organisations attempting to achieve a better skill match is to enhance job flexibility through job redesign, so overskilled individuals can have more opportunities to make full use of their existing and future skills and potentials. This can be practically accomplished by increasing variety and challenge in employees' day-to-day work content, in concert with tasks, responsibilities, or priorities that best utilise their relevant skills, abilities, and knowledge (Hackman & Oldham, 1980). Tied to this idea, careful attention is needed to ensure that job responsibilities and duties are closely related to employees' education and skills. Indeed, with increased iob control and autonomy, individuals themselves may be able to make some improvements or amendments in their job situations (roles, responsibilities, requirements) by appropriately adjusting how they approach their work responsibilities in order to better align the work with their potentials, needs, and preferences.

Third, because it is not always possible to change the nature or structure of work itself to directly improve the *objective skill mismatch* (e.g., person ability–job demand misfit), an alternative approach may be to target individuals' perceptions of overskilling (e.g., person needs–job supplies misfit; Maynard, 2011). Preferably, these perceptions should be of importance to organisations as they have been found by previous research to lead to similarly decreased job and career attitudes (Burris, 1983; Watt & Hargis, 2010; Connelly et al., 2011). Organisations should always seek

organisational policy, work culture, job design, practices and attitudes of employees, their superiors, and their peers, among others (see Alzubaidi, 2016).

¹⁰ Skill mismatch is a complex issue that is related to a host of circumstances and practices within the organisation, in which structural, social, and psychological factors often intervene. These include

to highlight how employees feel about their skill match relative to their expectations and goals, and attempt to reduce the perception of overskilling or skill underutilisation by enhancing other important job characteristics for individuals, which could help mitigate feelings of overskilling or its negative impacts (e.g., monetary and non-monetary reward; Maynard, 2011).

Another, and perhaps more overarching, priority for policymakers in Saudi Arabia is to ensure that human capital development planning and policies at the national and organisational are oriented toward the emphasis on, and promotion of not only skills accumulation but also the utilisation of these skills, which contributes to improved individual and organisational performance. This would require the collaborative effort of all major stakeholders and government authorities to address the current problem of haphazard and isolated human capital investment and constantly re-design policy interventions and strategies to ensure effective skill utilisation. Although these interventions targeted to increase skill match may appear very uncommon at the national and organisational levels in Saudi Arabia, they would, if carefully and seriously internalised, enhance utilisation of existing skills, abilities, and talents to gain maximum value for both the organisation and the individuals.

As with any empirical research of this kind, this study has several methodological limitations. The sample of graduates in this study was drawn from only one university in Saudi Arabia. Although the university is one of the largest in the country and produces the largest number of graduates each year, which is reflected by the fairly heterogeneous sample of the study, the majority of the participants in the study (57%) were from the same region where the university is located — the western region. It is acknowledged, therefore, that a broader

sampling selected from different universities might have revealed different results and allowed for comparisons between university graduates. It would be preferred for future studies to draw a sample from different universities and regions in order to be more confident in generalising the results to the population of all Saudi graduates in the labour market.

Additionally, because the study used a single self-reporting instrument to collect data on all variables at one point in time, the results are highly vulnerable to common method bias. and caution should be exercised when interpreting the impacts of skill mismatch. Although most of the variables in this study are best assessed as perceived constructs through self-assessment measures, future research may aim to reduce common method bias by collecting data on skill mismatch and outcome variables using alternative sources or at different points in time. Furthermore, where possible, collecting longitudinal data would permit firmer conclusions about the direction and causality of the relationships between skill mismatch and job or career attitudes. Due also to the use of self-reported data, social desirability is another potential source of measurement error, resulting from respondents trying to upgrade or inflate their personal (e.g., skills and credentials) or job status (e.g., job demands, requirements, or supplies) or generally giving the socially acceptable answers in terms of their self-perceptions and attitudes (Hartog, 2000). The findings and conclusions of the study should always be conjunction considered in with these limitations, which have important implications for future studies.

In addition, there are several other possible avenues for future research on skill mismatch based on the current gaps in the literature. Future studies seeking to examine skill mismatch in Saudi Arabia are encouraged to

use alternative measures of skill mismatch (e.g., either overall or specific skill underutilisation) in order to both validate the current results and draw even more decisive conclusions about the incidence and effects of skill mismatch. Moreover, the negative job and career consequences of overskilling reported in this study call for further examination of the potentially harmful impacts of skill mismatch among other populations in the Saudi labour market, especially on other important outcomes for individual employees, organisations' performance, and society. Another important avenue for future research is investigating the boundary conditions or determinants of skill mismatch, which deserve greater attention from researchers and decision-makers alike, and would provide organisations with important insights into managing overskilled employees. This study concludes by emphasising that skill mismatch has ironically received little attention in the literature, especially in developing countries. The study exhorts policy and decision makers in public and private organisations in Saudi Arabia to rethink their human capital management policies and practices to support the growing recognition of the importance of effective skill utilisation in the workplace for individual and organisational performance.

Acknowledgement

The author gratefully acknowledges the financial support from the Deanship of Scientific Research (DSR) at King Abdulaziz University (KAU), Jeddah, Saudi Arabia, under the Grant [178-324-1441].

Conflicts of interest

The author declares no conflict of interest.

Data availability statement

The data that support the findings of this study are available from the author upon reasonable request.

References

- Adams, G. a., & Beehr, T. a. (1998). Turnover and retirement: A comparison of their similarities and differences. *Personnel Psychology*, 51(3), 643–665. https://doi.org/10.1111/j.1744-6570.1998.tb00255.x
- Addy, S. N., Bonnal, M., & Lira, C. (2012). Toward a more comprehensive measure of labor underutilization: The Alabama case. *Business Economics*, 47(3), 214–227. https://doi.org/10.1057/be.2012.16
- Al-Yahya, K. O. (2010). The over-educated, under-utilized public professionals: Evidences from Oman and Saudi Arabia. *Journal of Management & Public Policy*, *1*(2), 28–47.
- Allen, J., & R. van der Velden. (2001). Educational mismatches versus skill mismatches: Effects on wages, job satisfaction, and on-the-job Search. *Oxford Economic Papers*, 53(3): 434–452. https://doi.org/10.1093/oep/53.3.434
- Allen, J., De Weert, E. (2007). What do educational mismatches tell us about skill mismatches? A cross-country analysis. *European Journal of Education*, 42 (1), 59–73. https://doi.org/10.1111/j.1465-3435.2007.00283.x
- Alzubaidi, M. (2016). Competence utilisation among foreign-trained faculty members in Saudi public universities [Doctoral dissertation, Monash University]. Monash University Research Repository. https://doi.org/10.4225/03/5844c10de7687

- Alzubaidi, M. A. (2020). The impact of overeducation on job outcomes: Evidence from Saudi Arabia. *International Journal of Research in Business and Social Science*, 9(4), 104–120. https://doi.org/10.20525/ijrbs.v9i4.768
- Alzubaidi, M., & O'Toole, P. (2015). Competence utilisation among foreign-trained faculty members in Saudi public universities. *Journal of Business and Policy Research*, 10(2), 64–78. https://doi.org/10.21102/jbpr.2015.12.102. 04
- Anderson, S., & Winefield, A. H. (2011). The impact of underemployment on psychological health, Physical health, and work attitudes. In D. C. Maynard & D. C. Feldman (Eds.), *Underemployment: Psychological, economic, and social challenges* (pp. 35–56). Springer.
- Badillo-Amador, L. B., Nicolás, Á. L., & Vila, L. E. (2012). The consequences on job satisfaction of job-worker educational and skill mismatches in the Spanish labour market: A panel analysis. *Applied Economics Letters*, 19(4), 319–324. https://doi.org/10.1080/13504851.2011.57 6999
- Badillo-Amador, L., García-Sánchez, A., & Vila, L. E. (2005). Mismatches in the Spanish labor market: Education vs. competence match. *International Advances in Economic Research*, 11(1), 93–109. https://doi.org/10.1007/s11294-004-7491-z
- Bickes, D. M., Yilmaz, C., Samur, A., & Demirtas, O. (2019). The relationship between perceived overqualification and counterproductive work behaviors: Moderating role of perceived distributive justice. *International Journal of Social Science Studies*, 8(1), 46. https://doi.org/10.11114/ijsss.v8i1.4628

- Bolino, M. C., & Feldman, D. C. (2000a). Increasing the skill utilization of expatriates. *Human Resource Management*, 39(4), 367–379. http://doi.wiley.com/10.1002/1099-050X(200024)39:4%3C367::AID-HRM7%3E3.3.CO;2-Z
- Bolino, M., & Feldman, D. (2000b). The antecedents and consequences of underemployment among expatriates. *Journal of Organizational Behavior*, 21(8), 889–911. https://doi.org/10.1002/1099-1379(200012)21:8<889::AID-JOB60>3.0.CO;2-G
- Budría, S., & Moro-Egido, A. I. (2018). Qualification and skill mismatches: Europe in a cross-national perspective. *Cuadernos Económicos de ICE*, (95), 151–188. https://doi.org/10.32796/cice.2018.95.664
- Burris, B. (1983). The human effects of underemployment. *Social Problems*, *31*(1), 96–110. https://doi.org/10.2307/800412
- Cable, D., & Edwards, J. (2004). Complementary and supplementary fit: A theoretical and empirical integration. *Journal of Applied Psychology*, 89(5), 822–834. doi:10.1037/0021-9010.89.5.822.
- Cammann, C. C., Fichman, M., Jenkins, D., & Klesh, J. R. (1983). Assessing the attitudes and perceptions of organizational members. In S. E. Seashore, E. E. Lawler III, P. H. Mirvis, & C. Cammann (Eds.), Assessing organizational change: A guide to methods, measures, and practices (pp. 71–139). John Wiley & Sons
- Caplan, R. D., Cobb, S., French, J. R. P., Jr., Harrison, R. V., & Pinneau, S. (1975). *Job demands and worker health*. U.S. Department of Health, Education, and Welfare.

- Cedefop (2010). The skill matching challenge: Analysing skill mismatch and policy implications (Cedefop reference series No. 3056). Publications Office of the European Union.
 - https://www.cedefop.europa.eu/files/3056 en.pdf
- Cedefop (2015). Skills, qualifications and jobs in the EU: The making of a perfect match? Evidence from Cedefop's European Skills and Jobs Survey (Cedefop reference series No. 3072). Publications Office of the European Union. https://doi.org/10.2801/606129
- Cedefop (2018). Insights into Skill Shortages and Skill Mismatch: Learning from Cedefop's European Skills and Jobs Survey (Cedefop reference series No. 106). Publications Office of the European Union. http://data.europa.eu/doi/10.2801/645011
- Connelly, C. E., Wilkin, C. L., & Gallagher, D. G. (2011). Understanding underemployment among contingent workers. In D. C. Maynard & D. C. Feldman (Eds.), *Underemployment: Psychological, economic, and social challenges* (pp. 145–162). Springer.
- Di Paolo, A., & Mañé, F. (2016). Misusing our talent? Overeducation, overskilling and skill underutilisation among Spanish PhD graduates. *Economic and Labour Relations Review*, 27(4), 432–452. https://doi.org/10.1177/103530461665747
- Edwards, J. R. (1991). Person-job fit: A conceptual integration, literature review, and methodological critique. In C. L. Cooper & I. T. Robertson (Eds.), International review of industrial and organizational psychology (pp. 283–357). John Wiley & Sons.
- Erdogan, B., & Bauer, T. N. (2011). The impact of underemployment on turnover and

- career trajectories. In D. C. Maynard & D. C. Feldman (Eds.), *Underemployment: Psychological, economic, and social challenges* (pp. 215–232). Springer.
- Feldman, D. C. (1996). The nature, antecedents and consequences of underemployment. *Journal of Management*, 22(3), 385–407. https://doi.org/10.1016/S0149-2063(96)90030-6
- Feldman, D. C., & Bolino, M. C. (2000). Skill utilization of overseas interns: Antecedents and consequences. *Journal of International Management*, 6(1), 29–47. https://doi.org/10.1016/S1075-4253(99)00013-7
- Feldman, D. C., Leana, C. R., & Bolino, M. C. (2002). Underemployment and relative deprivation among re-employed executives. *Journal of Occupational and Organizational Psychology*, 75(4), 453–471. https://doi.org/10.1348/096317902321119 682
- Feldman, D., & Turnley, W. (1995). Underemployment among recent business college graduates. *Journal of Organizational Behavior*, *16*(6), 691–706. https://doi.org/10.1002/job.4030160708/a bstract
- Feldman, D.C., & Weitz, B.A. (1991). From the invisible hand to the gladhand: Understanding a careerist orientation to work. *Human Resource Management*, 30: 237-257.
 - https://doi.org/10.1002/hrm.3930300206
- Ferreira, M., Kunn-Nelen, A., & De Grip, A. (2017). Work-related learning and skill development in Europe: Does initial skill mismatch matter? *Research in Labor Economics*, 45, 345–407. https://doi.org/10.1108/S0147-912120170000045010

- Flisi, S., Goglio, V., Meroni, E. C., Rodrigues, M., & Vera-Toscano, E. (2017). Measuring occupational mismatch: Overeducation and overskill in Europe—evidence from PIAAC. *Social Indicators Research*, 131(3), 1211–1249. https://doi.org/10.1007/s11205-016-1292-7
- General Authority for Statistics. (2020). *Labor market statistics: First quarter, 2020.* https://www.stats.gov.sa/ar/820
- Green, F., & McIntosh, S. (2007). Is there a genuine under-utilization of skills amongst the over-qualified? *Applied Economics*, 39(4), 427–439. https://doi.org/10.1080/000368405004277 00
- Green, F., & Zhu, Y. (2010). Overqualification, job dissatisfaction, and increasing dispersion in the returns to graduate education. *Oxford Economic Papers*, 62(4), 740–763. https://doi.org/10.1093/oep/gpq002
- Green, F., McIntosh, S., & Vignoles, A. (2002). The utilization of education and skills: Evidence from Britain. *The Manchester School*, 70(6), 792–811. https://doi.org/10.1111/1467-9957.00325
- Greenhaus, J., Parasuraman, S., & Wormley, W. (1990). Effects of race on organizational experiences, Job performance evaluations, and career outcomes. *The Academy of Management Journal*, *33*(1), 64-86. Doi: 10.2307/256352. http://www.jstor.org/stable/256352
- Hackman, J. R., & Oldham, G. R. (1980). *The design of work*. Addison- Wesley.
- Hartog, J. (2000). Over-education and earnings: Where are we, where should we go? *Economics of Education Review*, 19(2), 131–147. https://doi.org/10.1016/S0272-7757(99)00050-3

- Humphrys, P., & O'Brien, G. E. (1986). The relationship between skill utilization, professional orientation and job satisfaction for pharmacists. *Journal of Occupational Psychology*, *59*(4), 315–326. https://doi.org/10.1111/j.2044-8325.1986.tb00232.x
- Johnson, G. J., & Johnson, W. R. (1994).

 Perceived skill underutilization and distributive justice: The role of perceived supervisor support. *Sociological Spectrum*, 14(2), 129–142. https://doi.org/10.1080/02732173.1994.99 82057
- Johnson, G. J., & Johnson, W. R. (1995). Subjective underemployment and job satisfaction. *International Review of Modern Sociology*, 25(1), 73–84. http://www.jstor.org/stable/41421622
- Khan, L. J., & Morrow, P. C. (1991). Objective and subjective underemployment relationships to job satisfaction. *Journal of Business Research*, 22(3), 211–218. https://doi.org/10.1016/0148-2963(91)90002-F
- Kim, S. J., & Choi, S. O. (2018). The effects of job mismatch on pay, job satisfaction, and performance. *Journal of Open Innovation: Technology, Market, and Complexity*, 4(4), 49. https://doi.org/10.3390/joitmc4040049
- Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals' fit at work: A meta-analysis of person–job, person-organization, person–group, and person-supervisor fit. *Personnel Psychology*, 58(2), 281–342. https://doi.org/10.1111/j.1744-6570.2005.00672.x
- Lee, C. H. (2005). A study of underemployment among self-initiated expatriates. *Journal of World Business*, 40(2), 172–187. https://doi.org/10.1016/j.jwb.2005.02.005

- Livingstone, D. W. (2019). Underemployment of highly qualified labour in advanced capitalism: trends and prospects. *Journal of Education and Work*, 32(4), 305–319. https://doi.org/10.1080/13639080.2019.16 46415
- Luksyte, A., & Spitzmueller, C. (2011). Behavioral science approaches to studying underemployment. In D. C. Maynard & D. C. Feldman (Eds.), *Underemployment: Psychological, economic, and social challenges* (pp. 35–56). Springer.
- Mavromaras, K., & McGuinness, S. (2012). Overskilling dynamics and education pathways. *Economics of Education Review*, 31(5), 619–628. https://doi.org/10.1016/j.econedurev.2012. 02.006
- Mavromaras, K., Mcguinness, S., & Fok, Y. K. (2009). Assessing the incidence and wage effects of overskilling in the Australian labour market. *The Economic Record*, 85(268), 60–72. https://doi.org/10.1111/j.1475-4932.2008.00529.x
- Mavromaras, K., McGuinness, S., & Wooden, M. (2007). Overskilling in the Australian Labour Market. *The Australian Economic Review*, 40(3), 307–313. https://doi.org/10.1111/j.1467-8462.2007.00468.x
- Mavromaras, K., Mcguinness, S., O'Leary, N., Sloane, P., & Fok, Y. K. (2010). The problem of overskilling in Australia and Britain. *The Manchester School*, 78(3), 219–241. https://doi.org/10.1111/j.1467-9957.2009.02136.x
- Mavromaras, K., Sloane, P., & Wei, Z. (2015). The scarring effects of unemployment, low pay and skills under-utilization in Australia compared. *Applied Economics*, 47(23), 2413–2429.

- https://doi.org/10.1080/00036846.2015.10 08762
- Maynard, D. C. (2011). Directions future underemployment research: Measurement and practice. In D. C. Maynard & D. C. Feldman (Eds.), *Underemployment: Psychological, economic, and social challenges* (pp. 253–276). Springer
- Maynard, D. C., Joseph, T. A., & Maynard, A. M. (2006). Underemployment, job attitudes, and turnover intentions. *Journal of Organizational Behavior*, 27(4), 509–536. https://doi.org/10.1002/job.389
- McGuinness, S. (2006). Overeducation in the labour market. *Journal of Economic Surveys*, 20(3), 387–419. https://doi.org/10.1111/j.0950-0804.2006.00284.x
- McGuinness, S., & Sloane, P. J. (2011). Labour market mismatch among UK graduates: An analysis using REFLEX data. *Economics of Education Review*, 30(1), 130–145. https://doi.org/10.1016/j.econedurev.2010. 07.006
- McGuinness, S., Pouliakas, K., & Redmond, P. (2018). Skills mismatch: Concepts, measurement and policy approaches. *Journal of Economic Surveys*, 32(4), 985–1015. https://doi.org/10.1111/joes.12254
- McKee-Ryan, F. M., & Harvey, J. (2011). 'I have a job, but . . .': A review of underemployment. *Journal of Management*, 37(4), 962–996. https://doi.org/10.1177/014920631139813
- McKee-Ryan, F. M., Virick, M., Prussia, G. E., Harvey, J., & Lilly, J. D. (2009). Life after the layoff: Getting a job worth keeping. *Journal of Organizational Behavior*, *30*(4), 561–580. https://doi.org/10.1002/job.566
- Meir, E. I., Melamed, S., & Abu-Freha, A. (1990). Vocational, avocational, and skill

- utilization congruences and their relationship with well-being in two cultures. *Journal of Vocational Behavior*, 36(2), 153–165. https://doi.org/10.1016/0001-8791(90)90023-U
- Meroni, E. C., & Vera-Toscano, E. (2017). The persistence of overeducation among recent graduates. *Labour Economics*, 48, 120–143. https://doi.org/10.1016/j.labeco.2017.07.002
- Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology*, 78(4), 538–551. https://doi.org/10.1037/0021-9010.78.4.538
- Morrison, D., Cordery, J., Girardi, A., & Payne, R. (2005). Job design, opportunities for skill utilization, and intrinsic job satisfaction. *European Journal of Work and Organizational Psychology*, *14*(1), 59–79. https://doi.org/10.1080/135943204440002 72
- Morsy, H., & Mukasa, A. N. (2019). *Youth jobs, skill and educational mismatches in Africa* (Working paper series No. 326). Abidjan. https://www.afdb.org/en/documents/public ations/working-paper-series/
- O'Brien, G. E. (1980). The Centrality of Skill-Utilization for Job Design, In KD Duncan, M. M. Gruneberg & D Wallis (Eds.), *Changes in working life* (pp.167-187). John Wiley & Sons.
- O'Brien, G. E. (1982). The relative contribution of perceived skill-utilization and other perceived job attributes to the prediction of job satisfaction: A cross-validation study. *Human Relations*, 35(3), 219–237.

- https://doi.org/10.1177/001872678203500 304
- OECD (2013): OECD skills outlook 2013: First results from the Survey of Adult Skills.

 OECD Publishing.

 http://dx.doi.org/10.1787/9789264204256
 -en
- Quintini, G. (2011). Right for the job: Overqualified or under-skilled? (OECD Social, Employment and Migration Working Papers No. 121). OECD, Paris, France. https://doi.org/10.1787/5kg59fcz3tkd-en
- Ren, H., Bolino, M. C., Shaffer, M. A., & Kraimer, M. L. (2013). The influence of job demands and resources on repatriate career satisfaction: A relative deprivation perspective. *Journal of World Business*, 48(1), 149–159. http://dx.doi.org/10.1016/j.jwb.2012.06.01
- Roh, Y. H., Chang, J. Y., Kim, M. U., & Nam, S. K. (2014). The effects of income and skill utilization on the underemployed's self-esteem, mental health, and life satisfaction. *Journal of Employment Counseling*, 51(3), 125–141. https://doi.org/10.1002/j.2161-1920.2014.00047.x
- Rohrbach-Schmidt, D., & Tiemann, M. (2016). Educational (mis)match and skill utilization in Germany: Assessing the role of worker and job characteristics. *Journal for Labour Market Research*, 49(2), 99–119. https://doi.org/10.1007/s12651-016-0198-9
- Romero, L. M., & Salinas-Jiménez, M. del M. (2017). Skills use in the workplace and its effects on wages and on job satisfaction: an application to the Spanish case. *Personnel Review*, 59, 602–614. https://doi.org/10.1108/EL-01-2017-0019

- Tian, A. W., Wang, Y., & Chia, T. (2018). Put my skills to use? Understanding the joint effect of job security and skill utilization on job satisfaction between skilled migrants and Australian born workers in Australia. *Social Indicators Research*, 139(1), 259–275. https://doi.org/10.1007/s11205-016-1404-4
- Wassermann, M., Fujishiro, K., & Hoppe, A. (2017). The effect of perceived overqualification on job satisfaction and career satisfaction among immigrants:
- Does host national identity matter? *International Journal of Intercultural Relations*, 61, 77–87. https://doi.org/10.1016/j.ijintrel.2017.09.0 01
- Wilkins, R., & Wooden, M. (2011). Economic approaches to studying underemployment. In D. C. Maynard & D. C. Feldman (Eds.), *Underemployment: Psychological, economic, and social challenges* (pp. 13–34). Springer. https://doi.org/10.1007/978-1-4419-9413-4 2

عدم تطابق المهارات ونتائجه بين خريجي التعليم العالي في المملكة العربية السعودية

د. محمد على الزبيدي 📵

أستاذ اقتصاديات التعليم المساعد كلية الدراسات العليا التربوية، جامعة الملك عبد العزيز، المملكة العربية السعودية

مستخلص. هدفت هذه الدراسة إلى بحث مدى انتشار عدم تطابق المهارات ونتائجه على عدد من المواقف الوظيفية والمهنية بين خريجي التعليم العالي في المملكة العربية السعودية، وهو سياق لا يُعرف فيه سوى القليل عن هذه الظاهرة وآثارها. وقد تكونت عينة الدراسة من 438 خريجاً سعودياً ممن يعملون في سوق العمل. وللتحقق من فرضيات الدراسة حول مدى حدوث ونتائج عدم طابق المهارات بين الخريجين، تم استخدام التحليل الوصفي، والارتباطي، وتحليل الانحدار الخطي الهرمي المتعدد. قدمت نتائج الدراسة النتائج دعماً لفرضية انتشار عدم تطابق المهارات (الافراط في المهارات) بين الخريجين السعوديين في سوق العمل، حيث أفاد العديد من الخريجين في الدراسة (و خبراتهم بأن لديهم "مهارات مفرطة" ويعملون في وظائفهم لا تتطلب أو تستخدم جميع مهاراتهم، أو قدراتهم، أو خبراتهم المكتسبة. علاوة على ذلك، وتماشياً مع التوقعات، أشارت نتائج الانحدار الخطي الهرمي إلى وجود ارتباط سلبي ذو دلالة إحصائية بين الإفراط في المهارات—كحالة لعدم "التوافق بين الشخص والوظيفية"— وكل من الرضا الوظيفي، والرضا المهني؛ ووجود ارتباط إيجابي ذو دلالة احصائية بين الإفراط في المهارات وكل من النية لترك الوظيفة، والمواقف المهنية الوصولية (الانتهازية)، حتى بعد التحكم بعدد من المتغيرات الضابطة. تناقش الورقة الثر نتائج الدراسة وتقدم عدداً من التوصيات لمعاجلة مشكلة عدم تطابق المهارات وتخفيف آثارها السلبية بين الأربين في سوق العمل.

الكلمات المفتاحية. عدم تطابق المهارات؛ الإفراط في المهارات؛ استخدام المهارات؛ المواقف الوظيفية؛ المواقف المهنية؛ الخريجين؛ المملكة العربية السعودية

تصنيف (JEL): ايا J28 با J28