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The Utilisation of Education and Skills: Non-Pecuniary Consequences Among Graduates

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In this study, an attempt has been made to estimate the incidences of the job mismatch and its determinants in Pakistan. This study has divided the job mismatch into three categories: qualification-job mismatch, skill mismatch and field of study mismatch. The primary dataset has been used in which employed graduates of the formal sector have been targeted. The paper has also measured the qualification-job mismatch by three approaches, and found that about one-third of the graduates have been facing qualification-job mismatch. Similarly, more than one-fourth of the graduates are mismatched in skills, about half of them are over-skilled and the rest are under-skilled. The analysis also shows that 11.3 percent of the graduates have irrelevant, and 13.8 percent have slightly relevant jobs to their field of study. The analysis reveals that over-qualified and over-skilled graduates are less satisfied, while under-qualified and under-skilled graduates are more satisfied with their current jobs. A similar situation has been observed in case of the field of study mismatch, where both the moderate and complete fields of study matched graduates are more satisfied than the mismatched ones. The job search behaviour is positively associated with the level of education. Over-qualification has a positive impact, while under-qualification has a negative effect to search for another job. A good match between field of study and current job reduces the likelihood of intention to quit the job.

JEL Classification: I23, I24, J21, J24

Keywords: Education and Inequality, Higher Education, Human Capital, Labour Market

1. INTRODUCTION

Research on the issue of job mismatch has mushroomed in the late 1980s, especially in developed countries. Initial studies perceived it as a temporary phenomenon [Freeman (1976)]; however, it was not empirically supported as the incidences of job mismatch range from 10 percent to 40 percent with an average of 25 percent in all the developed countries [Groot and Maassen (2000)]. Both economists and sociologists view the job mismatch phenomenon as a serious efficiency concern with its pertinent socio-

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economic costs at individual, firm, and national level, including wage penalties, lower level of job satisfaction, and higher employee turnover rate;¹ lower productivity, extra costs on screening, recruiting and training, lower national welfare and ‘bumping down’ the labour market process at the national level [Battu, *et al.* (2000); McGuinness (2006)]. Thus, rapid change in the educational expansionary policies may not yield the desired real economic benefits.

In existing literature, job mismatch phenomenon can be divided in to three categories: qualification-job mismatch, skill-job mismatch, and the mismatch between the field of study and the job. The qualification-job mismatch compares the attained education/qualification (in years) by a worker which is required by his/her current job, while the skill mismatch compares an overall acquired competence with the required competences. The field of study mismatch evaluates as to how much studied field of discipline is relevant to the nature of the job?

No direct study on mismatch between jobs, skills and educational qualifications has been conducted in Pakistan. However, some studies have considered this phenomenon in the context of socio-demographic factors, educational system, and labour market rigidities. First, a variety of barriers including limited job information, institutional, legal, geographical, and discriminatory barriers are causing the job mismatch. Second, limited and skewed female labour participation across the sectors and occupations are still persisting along with a high gender gap, and vulnerable employment [Nazli (2004); Pakistan (2013)]. Third, though the educational opportunities, especially at higher education level expanded a lot,² heterogeneity of skills across the regions and institutes also rose with a decline in return to education [Qayyum, *et al.* (2007)]. With outdated curricula, frequent fluctuations in policies and limited government spending, the educational system is following a variety of tiers and heterogeneities. Fourth, in the line of ongoing demographic transition and labour market rigidities, the employment generation has not kept pace with the rising labour force. As a result, job search period has increased. The share of informal sector has also risen coupled with lower productivity and high risk of vulnerability, especially for the youth and the females [Pakistan (2011, 2013)].³ Moreover, the rising educated unemployment in recent years could indicate the poor choice of educational fields or labour market rigidities [Pakistan (2007)]. Fifth, job mismatch in Pakistan could also be due to the labour polarisation, where various occupational shares in the employment witnessed a change due to technological changes and that led to emergence the demand of some occupations, and a decline in other occupations. Keeping in view the importance of the job mismatch for researchers and policy-makers, this study aims to contribute to the literature on two fronts. As a pioneering study on the national front, it can help planners make better decisions, especially for the young population, which is the country’s greatest asset. On the international front, this study can extend the research on the skill mismatch and field-of-study mismatch, which have been widely ignored. This paper has thus, the following two objectives:

¹Dolton and Vignoles (2000), Dolton and Silles (2003), Chevalier and Lindley (2006).

²In 1947, there were only two universities which jumped up to 54 in 1999 and 132 at present.

³60 percent were considered vulnerable, meaning “at risk of lacking decent work” in 2012-13 [Pakistan (2013)].

- (i) To estimate three types of job mismatch: qualification-job mismatch, skills-job mismatch, and field-of-study-job mismatch.
- (ii) To evaluate the non-pecuniary consequences of the job mismatch by estimating the impact of three types of job mismatch on the job satisfaction, and turnover intention.

The rest of the study is organised as follows. Section 2 presents a conceptual framework of job mismatch by linking it with the job satisfaction, and turn over intention. A discussion on data sources and methodology is given in Section 3. The results for the incidences of job mismatch and the non-pecuniary consequences of job mismatch are given in Sections 4 and 5, followed by a conclusion and policy considerations summarised in the final section.

2. JOB MISMATCH: PAKISTAN'S CONTEXT

No direct study on job mismatch has been carried out in Pakistan. However, this issue can be perceived from various researches on educated unemployment, under-employment and statistics from various rounds of Labour Force Survey (LFS). The phenomenon can also be captured from some studies conducted over socio-demographic factors, educational system and labour market rigidities.

The bulk of research in Pakistan has been conducted on the economic activity rate, however, issues of job mismatch can be linked both with the micro and macro labour market trends. First, the country is in demographic transition phase with an excessive labour force growth of around 4 percent per annum, while GDP growth is quite inadequate to generate job opportunities for new entrants in the labour market. Second, Pakistan has a vast geographic spread with more concentration of population in the rural areas. However, formal job opportunities are quite limited in majority of the rural areas as well as in urban areas of south Punjab, interior Sindh, Balochistan, south KP due to lack of industrial base, limited access to services sector, and underprivileged rural non-farm activities. Graduates in these areas are facing not only limited labour market information, but they are also at a disadvantage due to their remote locations.

Third, higher education has expanded rapidly over the last two decades, and gender gap has narrowed over time as the country produced massive numbers of female graduates, but their share in the labour market, especially in the formal sector is still restricted. Females have also been facing cultural and mobility constraints both from supply and demand sides. Thus, limiting them to fewer occupations and industries. On the other hand, rapid educational expansion over a short period has raised the heterogeneity of skills across the regions and across the institutes, as a majority of these new born universities are not capable of delivering the right level of skills as demanded by the labour market.

Wages in Pakistan have remained quite high in the public sector as compared to the corporate sector [Irfan (2008)]. The existence of positive wage differentials and job security in favour of the public sector may give rise to job queues and 'wait' unemployment for these graduates. Being educated people, they might also have high wage reservation that allows them to wait for a decent entry in the labour market. As highlighted by Arif, *et al.* (n.d.) unemployment is thus, seen as being largely as a

mismatch between jobs, and workers in the labour market due to misinformation and availability of jobs.

Despite a rise in the labour force participation, share of formal sector is declining in Pakistan, suggesting that fewer jobs are now available for the graduates. Being these structural imperfections, both on demand and supply side, unemployment rates are the highest among graduates than other educational categories, including illiterate workers since 2003-2004. Over time, their percentage is also rising among those who are below minimum wage. Table 1 shows the wage of unskilled labour to protect his/her basic needs.

Table 1

Percentage of Graduates (Ages 22–59) Who are Below Minimum Wage

Year	Female	Male	Total
2003-2004	18.4	4.4	6.8
2006-2007	30.7	6.4	11.2
2008-2009	29.9	9.9	14.1
2013-2014	30.0	11.3	14.9

Source: Estimated from the micro dataset of LFS 2003-2004, 2006-2007 and 2013-2014.

Note: Minimum wage was Rs 2500 in 2003-2004, Rs 4000 in 2006-2007, Rs 6000 in 2008-2009 and Rs 10,000 in 2013-2014.

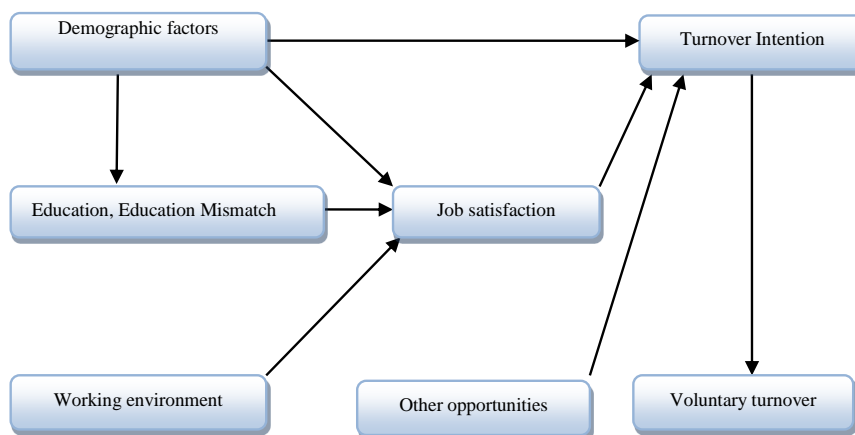
3. JOB MISMATCH AND NON-PECUNIARY CONSEQUENCES: A CONCEPTUAL FRAMEWORK

Research on job satisfaction is relatively recent with an unusual amount of interest in it. It is an interesting subject for economists, as it can be used to forecast job turnover and a signal of worker's productivity [Cecilia and Davia (2005)]. Locke defines it as 'a positive emotional condition resulting from the evaluation of one's job experience'. Satisfaction depends on the expectations, needs and ethics [Locke (1976)]. The standard economic theory hypothesises that the job satisfaction depends positively on earnings and negatively on working hours, as well as on a set of other job specific characteristics. Many other social and economic studies have found that higher education is explicitly associated with higher levels of satisfaction with higher wages, promotions and better quality jobs [Ross and Willigen (1997)]. However, education also increases expectation about both wages and job features [Clark and Oswald (1996)]. Disappointment is a source of dissatisfaction, if expectations do not fulfill [Cecilia and Davia (2005)]. Psychological theories reveal that education/skill mismatches are linked with dullness and poor level of job satisfaction [Warr (1987)].

Worker turnover has gained a lot of interest for both the employers and researchers across a wide range of disciplines. In the current decade, this interest has been mushroomed in the U.S. due to financial pressures, and issue of worker performance.

Mobley, *et al.* (1979) have provided theoretical framework to explain this turnover process particularly the voluntary turnover as framed in Figure 1. First, the demographic characteristics which include age, gender, and family constraints pursue a person's decision to remain in or quit a job. Second, job satisfaction influences a cognitive retreat process to turnover intention. Third, the working environment significantly affects the job satisfaction, which, in turn impacts turnover intention and finally, this turnover intention stimulates the voluntary turnover. Few economists have provided another dimension of the turnover by relating it with the qualification-job mismatch [Alba (1993); and Sloane, *et al.* (1999)]. One can also deem that both the tenure in the current job and level of information about the labour market also influence the turnover decisions.

Fig. 1. General Overview of Job Satisfaction and Turnover Process



Source: Additions in Lambert, *et al.* (2001) framework.

Last couple of decades brought rapid changes to the labour market structure of the developed and the developing countries, where job opportunities are shifting away from middle-skill jobs toward high-skill and low-skill jobs which is known as a 'job polarisation'. Ignoring the concepts of comparative advantage, relative advantage and factor intensity; the vast advances in the technology have changed the way things are produced, and how people interact with each other, all around the world [Smith (2013)]. Both globalisation and trade have influenced the labour market structures including mobility of workers and turnover behaviour [Wolfgang (2014)].

High turnover which usually occurs in the private sector brings devastation to the organisation with its direct, indirect and social cost. Expenditures incurred on selection, recruitment and training of new employees are direct costs, while costs of learning, reduced morale, pressure on employees, and loss of social capital are indirect costs [Des and Shaw (2001)]. In Pakistan, a major proportion of workers, especially in the private sector are on contractual jobs. Currently, even government and semi-government institutions are adopting the contractual assignments. However, by adopting these criteria, both employees and employers have to face some hiring

and firing costs. These costs should be imparted more especially in the developing countries, where wages are relatively rigid due to lack of information, higher level of unemployment, and absence of collective bargaining policies.

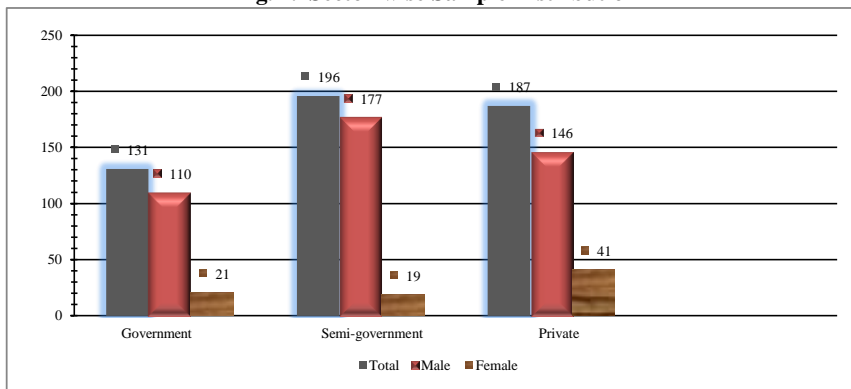
The researchers have paid less attention towards the non-monetary consequences of the job mismatch i.e. job satisfaction and turnover. Earlier, Tsang (1987) supported the notion that the workers with over-qualification tended to have less job satisfaction, resulting in the lower productivity and a higher turnover. Higher rates of turnover amongst over-qualified workers were also reported by Alba (1993) and Sloane, *et al.* (1999), who suggested that the firms hiring such workers were more likely to lose investments in training, recruitment and screening. Hersch (1991) and Battu, *et al.* (1999) found that over-qualified workers and under-qualified women are less satisfied than those who have the required level of formal education.

Jim and Velden (2001) and Green and McIntosh (2002) found that the qualification mismatch had more effect on the job satisfaction than the qualification-job mismatch. Using three welfare measures (enthusiasm, contentment and job satisfaction), Green and McIntosh (2002) also revealed that the over-qualified workers were significantly more depressed, more anxious and less satisfied in their jobs, than those who are not over-qualified. Cabral and Jose (2005) analysed the effect of over-qualification in four dimensions of job satisfaction (job security, wage, type of work and number of working hours), and concluded that over-qualification negatively affects the job satisfaction in all these four cases. Lourdes and Luis (n.d.) suggested that the workers with qualification mismatch have lower probability of satisfaction than those who are accurately match, while the effects of qualification-job on job satisfaction were not statistically significant.

4. DATA DESCRIPTION AND METHODOLOGICAL FRAMEWORK

4.1. Data Description

Due to non-availability of secondary data sources on the targeted information, the present study has used the primary dataset by targeting the employed graduates working in the formal sector, who have 14 and above years of education/qualification (Graduates, Master, MS/MPhil, PhD), named as 'graduate workers'. A primary survey, the Survey of Employed Graduates (SEG) was conducted in 2010 in two major cities of Pakistan, i.e. Islamabad and Rawalpindi to study the job mismatch phenomenon in depth. At a broader level, the targeted universe in the SEG dataset has been divided into three major groups: graduates in the federal government, graduates in the autonomous/semi-autonomous bodies under the federal government and finally graduates in the private sector [see Farooq (2011) for detailed sampling and data collection]. Figure 2 shows the distribution of complete sample of 514 graduates across three major groups according to their relative employment share. All the questionnaires have been conducted by face-to-face interviews.

Fig. 2. Sector-wise Sample Distribution

Few limitations can also be noted for the present analysis. First, this analysis is limited only to the formal sector. However, a lot of graduates can be found in informal sector as well. Second, this analysis is limited only to two major cities of Pakistan that cannot reflect the issues of job mismatch for entire country. Third, analysis of the job satisfaction and turnover intention are based on graduate's perception, and it might vary by individual's level of ability and insight about the labour market. Forth, the analysis has considered the job mismatch issue from worker's perspective, it is likely that the employer might consider some other determinants of job-mismatch including qualification inflation and grade drift.⁴

4.2. Methodological Framework for the Estimation of Job Mismatch

As mentioned in the introductory section that the job mismatch has three dimensions; qualification-job mismatch, skills-job mismatch and field of study-job mismatch. Regarding the first dimension, the study has measured qualification-job mismatch by three methods to measure required education/qualification for a particular job; Job Analyst (JA), Worker Self-Assessment (WSA), and Realised Match (RM) method. For the JA method in the SEG dataset, the required education/qualification has been measured by questioning the sampled graduates: 'In your opinion, what level of formal education/qualification (years) and experience (years) is demanded by your employer/organisation to get the job like yours?' For the WSA approach in SEG dataset, graduates were asked: 'In your opinion, how much formal education/qualification (years) and experience (years) is required to perform your current job well?' By comparing the attained education/qualification with required education/qualification, the graduates have been classified into three categories: over-qualified, under-qualified and matched graduates [see Farooq (2011) for detail]. For the third, RM measure, the methodology of Verdugo and Verdugo (1989), and NG (2001) has been followed to measure the required

⁴Grade drift is dropped in quality of education. It will be evident if employers are found to be increasing educational requirements for younger workers. The concept of grade drift is related to heterogeneity as individuals with the similar education potentially have significantly different ability levels [McGuinness (2006)].

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qualification, on the basis of two variables that are, completed years of schooling and occupations. The mean years of schooling at two-digit occupational classification have been used as a measure of required qualification by assuming that the graduates working in similar occupation require the same level of qualification. The qualification-job mismatch has been estimated by comparing the attained, and required qualification with (+/-) one standard deviation of the mean.⁵ Graduates with attained qualification greater and less than one standard deviation were defined as over-qualified and under-qualified graduates, respectively. The middle range; within +/- of one standard deviation comprised on the matched workers.

Unlike existing subjective methodologies as adopted by Green and McIntosh (2002) and Lourdes, *et al.* (2005) this study has followed the specific approach to measure skills-job mismatch, where initially, the level of nine specific attained and required skills have been estimated in the SEG survey on a five-point scale, ranging from 1 'not at all' to 5 'a lot'. These nine skills are; supervisory skills, English writing skills, English speaking skills, numeracy skills, teamwork skills, management skills, computer skills, research skills, and time management skills. Through Principal Component Analysis (PCA) method, the weights have been estimated on attained and required skills on the basis of mean required level of nine skills, by assuming that the workers in same occupations at two-digit occupational coding require the similar types of skills in their jobs. The skill mismatch has been estimated by comparing the attained skill index and the required skill index with (+/-) 0.08 standard deviation (SD) of the mean (0.075 SD for SEG weights).⁶ Graduates with the attained skills more or less than required skills by 0.08 standard deviation were defined as over-skilled and under-skilled, respectively. The middle range comprises the skill matched graduates [see Farooq (2011) for detail].

One of the most significant types of mismatch in Pakistan, the field of study mismatch has been estimated in the SEG dataset by subjective approach with the question: 'how much is your current job relevant to your studied field of discipline?' The four possible options were; irrelevant field of study, slightly relevant, moderately relevant and completely relevant field of study.

4.3. The Impact of Job Mismatch on Job Satisfaction

In the SEG 2010 dataset, the job satisfaction has been measured by the following question: 'Considering your qualification and skills, how much you are satisfied with your current job?' with the five answers ranging from 1 'very dissatisfied' to 5 'very satisfied'. To estimate the impact of attained qualification and the three types of job mismatch on job satisfaction, the following equations have been estimated:

$$St_i = \alpha_0 + \alpha_1 E_i + \alpha_2 X_i + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad \dots \quad (1)$$

$$St_i = \beta_0 + \beta_1 D^{oj}_i + \beta_2 D^{uj}_i + \beta_3 X_i + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

$$St_i = \rho_0 + \rho_1 D^{ow}_i + \rho_2 D^{uw}_i + \rho_3 X_i + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad \dots \quad (3)$$

$$St_i = \gamma_0 + \gamma_1 E_i + \gamma_2 D^{os}_i + \gamma_3 D^{us}_i + \gamma_4 X_i + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad \dots \quad (4)$$

⁵+/- One standard deviation was used as the actual mean deviation of the difference of the attained qualification and the required qualification was 0.989, close to one.

⁶Standard deviation has been calculated after comparing the both attained and required skill index.

$$S_{i7} = \delta_0 + \delta_1 E_i + \delta_2 D_i^l + \delta_3 D_i^m + \delta_4 D_i^h + \delta_5 X_{ki} + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad (5)$$

Where S_{i7} represents the corresponding level of job satisfaction for graduate i by considering his/her qualification and skills, E_i in Equation 1 represents the level of attained qualification. Equations 2 and 3 measure the impact of qualification-job mismatch on job satisfaction by JA and WSA method, respectively, where two dummy variables have been used for over-qualification and under-qualification. Equation 4 estimates the impact of skill mismatch on job satisfaction with two dummies of over-skill and under-skill, while Equation 5 estimates the impact of field of study, and job mismatch on the job satisfaction, with three dummies representing the weak, moderate and complete relevance. Vector X_i contains other control independent variables related to personal characteristics, human capital and labour market characteristics of graduate i . Since the dependent variable has five outcomes with an order in nature, the Ordered Logistic Regression (OLR) has been applied to estimate the above equations.

4.4. The Impact of Job Mismatch on Turnover Intention

In the SEG dataset, the turnover intention has been estimated from the following question: 'Have you properly applied for any other alternative job during the period?' with 5 options range from 'never search' to very 'fresh search'.⁷ To estimate the impact of attained qualification, and the three types of jobs mismatch on turnover intentions, the following equations have been estimated:

$$Sb_i = \alpha_0 + \alpha_1 E_i + \alpha_2 X_i + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (6)$$

$$Sb_i = \beta_0 + \beta_1 E_i + \beta_2 D_i^{oj} + \beta_3 D_i^{uj} + \beta_4 X_i + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad (7)$$

$$Sb_i = \rho_0 + \rho_1 E_i + \rho_2 D_i^{ow} + \rho_3 D_i^{uw} + \rho_4 X_i + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad (8)$$

$$Sb_i = \gamma_0 + \gamma_1 E_i + \gamma_2 D_i^{os} + \gamma_3 D_i^{us} + \gamma_4 X_i + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad (9)$$

$$Sb_i = \delta_0 + \delta_1 E_i + \delta_2 D_i^l + \delta_3 D_i^m + \delta_4 D_i^h + \delta_5 X_{ki} + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad (10)$$

Where Sb_i represents the corresponding level of turnover intention to graduate i , vector X_i contains other control independent variables related to personal characteristics, human capital and labour market characteristics of worker i . In Equation 6, the attained qualification has been used as explanatory variable, while Equations 7 and 8 measure the impact of qualification-job mismatch on turnover intention by the JA and WSA approach, respectively. Equation 9 estimates the impact of skills mismatch on turnover intentions, while Equation 10 estimates the impact of field of study mismatch on turnover intention. Again the dependent variable has five outcomes with an order. Therefore, the OLR has been applied to estimate the above equations. As evident from the empirical studies, job search behaviour strongly depends on the job satisfaction [Khatri and Fern (2001); Sarminah (2006); Rahman, *et al.* (2008)]. However, this study has not used the job satisfaction as a regressor to avoid the issues of both multicollinearity and endogeneity, as various correlates of turnover intention also determine the level of satisfaction i.e. personal characteristics of graduates (age, gender, education), job mismatch and labour

⁷1= Not apply, 2= 1 to 2 year ago apply, 3= 6 to 12 month ago apply,
4= 2 to 5 month ago, 5= in the last 2 months.

market characteristics. The inclusion of job satisfaction might reduce the predictive power of such correlates.

5. THE INCIDENCES OF JOB MISMATCH

The estimates in Table 2 show that the incidence of qualification-job mismatch varies by the three measures. Both the WSA and JA show the level of over-qualification, and under-qualification in close to each other compared to the RM measure. High statistical relation was found between the WSA and JA, while poor statistical relation was found with the RM of both JA and WSA.⁸ These estimates are consistent with the earlier findings that the RM method reports a lower incidence of over-qualification [Meta-analysis of Groot and Maassen (2000) and McGuinness (2006)].

Table 2

The Level of Qualification-Job Mismatch by Various Measures (Percentage)

Measures	Matched	Under-qualification	Over-qualification
WSA Method	65.4	9.9	24.7
JA Method	69.5	4.5	26.1
RM Method	63.4	21.6	15.0

The results of over skill mismatch have been reported in Table 3 which shows that more than one-fourth of the graduates are mismatched in skills either in terms of over-skilled or under-skilled. The phenomenon of 'matched graduates' is considerably higher among males (73 percent–74 percent) than among females (67 percent). A lesser proportion of female graduates are under-skilled, while, there are more over-skilled female graduates. It reflects the scenario of relatively more under-utilisation of females' skills in their jobs in Pakistan.

Table 3

The Distribution of Respondents by the Level of Skill Mismatch (Percentage)

	Matched Graduates	Under-skilled	Over-skilled
Female	66.7	11.1	22.2
Male	72.8	13.9	13.4
Total	71.8	13.4	14.8

The results for the field of study mismatch have been reported in Table 4 which shows that 11 percent of the graduates consider that their current jobs are totally irrelevant to their studied field of discipline. Another 14 percent reported that their jobs are slightly relevant, followed by the moderately relevant with 38 percent and completely relevant with 37 percent. Further important information is that the female graduates are facing more field of study mismatch than the male graduates. As one-third of the female graduates are mismatched, either with irrelevant or weak relevant category; however, less than one-fourth of the male graduates are falling in these first two categories (Table 4).

⁸ Parametric t-test and spearman rank correlation tests were applied.

Table 4

The Percentage Distribution of the Respondents by Field of Study Mismatch

Level of Mismatch	Female	Male	Total
Irrelevant	14.8	10.6	11.3
Slightly Relevant	18.5	12.9	13.8
Moderately Relevant	33.3	39.3	38.3
Completely Relevant	33.3	37.2	36.6

6. THE NON-PECUNIARY CONSEQUENCES OF JOB MISMATCH

Education leads to a higher level of earnings, faster promotions and decent jobs. Workers with higher education expect attractive and challenging work and sometimes, they also assume the ‘comparative income hypotheses’ with their peers. Job dissatisfaction might increase when these expectations are not met [Clark and Oswald (1996)]. Such dissatisfaction might limit the efforts of an individual toward his/her vibrant dynamic career. It seems that the ongoing trends of the higher education in Pakistan would increase the gap between demand and supply in the coming years, and it might lead to dissatisfaction, especially among the educated youth. In the following two sub-sections, the implications of job mismatch on job satisfaction and turnover intention have been discussed.

6.1. The Impact of Job Mismatch on Job Satisfaction

Empirical evidences suggest that education has a positive as well as a negative effect on job satisfaction. Education has a positive effect on job satisfaction through ‘wage effect’ and negative effect occurs due to a higher expectation. However, Equation 1 in Table 5 shows that the satisfaction is negatively associated with the level of education even after controlling the wage effect, thus supporting that graduates in Pakistan have higher wage expectations that are not fulfilled. These results support the existing studies that the higher educated workers enlist a lower level of job satisfaction [Warr (1992); Clark and Oswald (1996)]. Equation 2 and Equation 3 in Table 5 shows the impact of qualification-job mismatch on the job satisfaction. The estimates show that as compared to the matched graduates, satisfaction is negatively associated with over-qualification, and positively associated with under-qualification, which is consistent to earlier studies.⁹ The estimates in Equation 4 show that over-skilled graduates are less satisfied, as compared to adequately skilled graduates. One interesting finding is about the impact of field of study, and job mismatch on job satisfaction, where the level of job satisfaction increases with an improvement in the field of study match. Equation 5 shows that the moderate and complete relevant field of study graduates is about 4.5 and 5.3 times more satisfied than the graduates working in the irrelevant field of study. A good match is linked with better wages, and a better understanding of the nature of work, so it will have a higher satisfaction level.

Wages have a strong influence on the job satisfaction. Various macroeconomic and labour market equations emphasise the importance of efficiency wage, which not only boost the morale and job involvement of the workers, but also avert him/her away to

⁹Hersch (1991); Battu, *et al.* (2000); Cecilia and Davia (2005) and Lourdes, *et al.* (n.d).

search for another job. Salop and Steven (1976) logically expressed that ‘a rising wage profile acts as a self-selection appliance to discourage potential “movers” from searching employment’. Regarding age, the older workers are more satisfied as compared to the younger ones. Tenure has a positive influence on the likelihood of being satisfied with the current job. Finally, the analysis related to the job satisfaction shows the importance of the welfare effects which comprises of the employer’s behaviour, colleague’s cooperation, motivation, appreciation, and criticism. The results show that the stress due to boss’s behaviour reduces the likelihood of job satisfaction, while a colleague’s good behaviour, with appreciation and motivation, raise the probability of job satisfaction (Table 5).

Table 5

The Effect of Job Mismatch on Job Satisfaction—Ordered Logit Equation

Regressors	Equation 1		Equation 2		Equation 3		Equation 4		Equation 5	
	Attain		Job Analyst		Worker Self-		Skill		Field of	
	Qualification		(JA)		Assessment (W.S.A)		Mismatch		Study	
	Odd	St. Err.	Odd	St. Err.	Odd	St. Err.	Odd	St. Err.	Odd	St. Err.
	Ratio		Ratio		Ratio		Ratio		Ratio	
Over-qualification(yes=1)	-	-	0.215*	0.051	0.110*	0.028	-	-	-	-
Under-qualification(yes=1)	-	-	2.138**	0.930	2.205*	0.687	-	-	-	-
Over-skilled (yes=1)	-	-	-	-	-	-	0.565*	0.150	-	-
Under-skilled (yes=1)	-	-	-	-	-	-	0.934	0.245	-	-
Weak relevance/irrelevant	-	-	-	-	-	-	-	-	1.169	0.397
Moderate relevance/irrelevant	-	-	-	-	-	-	-	-	4.491*	1.420
Complete relevance/irrelevant	-	-	-	-	-	-	-	-	5.344*	1.850
Education (years)	0.766*	0.062	-	-	-	-	0.781*	0.063	0.696*	0.058
Log(wage)	2.608*	0.468	2.090*	0.352	1.881*	0.320	2.502*	0.452	2.393*	0.431
Tenure (years)	1.034**	0.019	1.047*	0.019	1.040*	0.019	1.038*	0.019	1.031**	0.019
Age (years)	1.036*	0.017	1.0419*	0.016	1.039*	0.016	1.039*	0.017	1.029**	0.017
Occupation (manager as ref.)										
Professional	1.072	0.321	1.059	0.318	0.999	0.301	1.095	0.328	1.039	0.314
Associate professional	0.771	0.231	0.845	0.255	0.920	0.279	0.776	0.232	0.832	0.252
Clerk	0.126*	0.048	0.290*	0.116	0.378*	0.151	0.128*	0.049	0.204*	0.080
Elementary	0.132*	0.076	0.398**	0.236	0.461	0.275	0.141*	0.081	0.237*	0.137
Stress due to boss behaviour	0.708**	0.156	0.686**	0.150	0.608*	0.134	0.717**	0.157	0.718	0.159
Colleague cooperate	1.030	0.195	0.912	0.175	0.902	0.175	0.998	0.190	1.053	0.202
Colleague motivate	1.498*	0.304	1.631*	0.335	1.593*	0.330	1.464*	0.298	1.540*	0.315
Colleague not criticise	1.483*	0.270	1.416**	0.261	1.449*	0.268	1.483*	0.271	1.476*	0.271
Log likelihood	-582.982		-564.510		-542.825		-580.663		-563.031	
LR chi square	158.59		195.53		238.90		163.22		198.49	
Pseudo R ²	0.1197		0.1476		0.1804		0.1232		0.1499	
N					514					

* Denote significant at 5 percent, ** Denote significant at 10 percent.

Note: The equations also include sex, marital status, type of organisation, type of job and sector of employment.

6.2. The Impact of Job Mismatch on Job Search Behaviour

Equations in lines 6 to 10, as reported in methodological section, the odd ratios obtained by the ordered logit equation have been reported in Table 6. The second column of Table 6 shows that the human capital accumulation has a strong impact on the likelihood of job search, as an additional year of schooling raises the probability of job search by 1.5 times.

Regarding the qualification-job mismatch, the coefficients by the JA and WSA methods show that over-qualification has a positive impact to search another job with the probability range from 4.3 to 8.8 times. While under-qualification has a negative effect on the quit intention, however, its coefficient is not significant in the JA approach. These results are consistent with earlier studies that a low level job is also to look for alternative opportunities [Alba (1993); Jim and Egbert (2005)]. The results about the impact of skill mismatch on turnover intention are not statistically significant. Another important finding is the impact of the field of study mismatch on turnover intention. The estimates show that an improvement in the field of study, and job mismatch reduce the turnover intention, as the moderate and complete matched graduates have less likely to turnover intention by 0.83 to 0.89 times, as compared to those who are in mismatched jobs.

The negative impact of age and wages on job search behaviour is consistent with earlier studies, that a rising wage profile acts as a self-appliance to discourage workers to search for other jobs [Jim and Egbert (2005)]. Graduates in lower occupational titles (clerical support workers and elementary workers) have more turnover intentions, when compared with those who are in managerial jobs. The cooperation of colleagues also reduces the probability of turnover intention (Table 6).

7. CONCLUSIONS AND POLICY IMPLICATIONS

The main focus of this study is to estimate three types of job mismatch and analysing the non-pecuniary consequences of the job mismatch. The present study has found that the choice of measurement method has a significant effect on the incidences on qualification-job mismatch. Overall 31–37 percent of the graduates are facing the qualification-job mismatch, either falling in over-qualification or under-qualification category. Similarly, more than one-fourth of the graduates are mismatched in skill, either in terms of being over-skilled or under-skilled. The phenomenon of ‘matched graduates’ is considerably higher among males than females. An important information is that the female graduates are facing more field of study mismatch than the male graduates, as one-third of the female graduates are mismatched, either with the irrelevant or weak relevant category. However, less than one-fourth of the male graduates are falling in these first two categories.

This study has also examined two non-monetary consequences of the job mismatch: job satisfaction and turnover intention. Regarding job satisfaction, the over-qualified and over-skilled graduates are less satisfied, while the under-qualified and under-skilled graduates are more satisfied with their current jobs. A similar situation has been observed over the field of study mismatch, where both the moderate and complete fields of study matched graduates are more satisfied than the mismatched ones.

Table 6

The Effect of Job Mismatch on Turnover Intention—Ordered Logit Equation

Regressors	Equation 6		Equation 7		Equation 8		Equation 9		Equation 10	
	Attain Qualification		JA		WSA		Skill Mismatch		Field of Study	
	Odd Ratio	St. Err.	Odd Ratio	St. Err.	Odd Ratio	St. Err.	Odd Ratio	St. Err.	Odd Ratio	St. Err.
Over-qualification(yes=1)	-	-	4.275*	1.049	8.762*	2.298	-	-	-	-
Under-qualification(yes=1)	-	-	0.923	0.395	0.551*	0.169	-	-	-	-
Over-skill (yes=1)	-	-	-	-	-	-	0.866	0.215	-	-
Under-skill (yes=1)	-	-	-	-	-	-	0.879	0.218	-	-
Weak relevance/Irrelevant	-	-	-	-	-	-	-	-	1.030	0.344
Moderate relevance/Irrelevant	-	-	-	-	-	-	-	-	0.174*	0.054
Complete relevance/Irrelevant	-	-	-	-	-	-	-	-	0.115*	0.039
Education (years)	1.509*	0.114	1.263*	0.105	1.176**	0.099	1.515*	0.116	1.800*	0.148
Age	0.966*	0.016	0.965*	0.016	0.969**	0.017	0.966*	0.016	0.946*	0.016
Log(wage)	0.631*	0.098	0.762**	0.121	0.880	0.145	0.628*	0.098	0.720*	0.113
Occupation (manager as ref.)										
Professional	0.805	0.226	0.785	0.222	0.807	0.230	0.805	0.226	0.828	0.238
Associate professional	1.226	0.346	1.107	0.316	0.973	0.279	1.234	0.349	1.116	0.324
Clerk	7.582*	2.809	3.350*	1.335	2.264*	0.905	7.687*	2.855	3.964*	1.514
Elementary	8.636*	4.763	3.075*	1.761	2.575**	1.482	9.005*	5.004	3.659*	2.132
Stress due to boss (yes=1)	1.040	0.217	0.999	0.210	1.143	0.242	1.049	0.219	0.978	0.206
Colleague cooperate (yes=1)	0.656*	0.121	0.702**	0.131	0.689*	0.129	0.646*	0.120	0.630*	0.118
Colleague motivate (yes=1)	0.959	0.188	0.942	0.187	0.987	0.197	0.959	0.188	1.012	0.201
Colleague not criticise (yes=1)	0.797	0.138	0.851	0.148	0.813	0.142	0.800	0.139	0.792	0.138
Log likelihood	-708.782		-690.840		-668.914		-708.512		-672.189	
LR chi square	171.22		207.11		250.96		171.77		244.41	
Pseudo R ²	0.1078		0.1304		0.1580		0.1081		0.1538	
N					514					

* Denote significant at 5 percent. ** Denote significant at 10 percent.

Note: the equations also include sex, marital status, type of organisation, type of job and sector of employment.

The satisfaction is negatively associated with the level of education and positively associated with wages and tenure in the current job. The job search behaviour is positively associated with the level of education. The over-qualification has a positive impact, while the under-qualification has a negative effect to search for another job. An important finding is that, a good match between fields of study and current job reduces the likelihood of quit intention.

In the present analysis, the incidence of over-qualification does not mean that the level of education should be lowered: it rather suggests the need for better quality of education and skills. Findings of this study lead to the following policy implications and recommendations, primarily in two areas: reforms in human resource development and labour market institutions. Some policy implications have been drawn directly from analysis, while some implications can be considered secondarily to avoid the issues of job mismatch in Pakistan.

- A limited analysis is carried out in the present study due to lack of information in the national dataset. There is a need to improve the LFS questionnaire for

skill assessment, job satisfaction, turnover intention and labour market opportunities. A module about the history of employment may also be made part of the LFS.

- Some tracer type studies would be helpful to understand the employment patterns, and skills demanded by the various sectors and occupations. It would help not only to understand the nature of job mismatch, but also guide the planners and enrolled youth about the labour market opportunities and type of skills needed.
- The current analysis reveals that females are facing more issues of job mismatch. Their rapid enrolment with the limited labour participation addresses the socio-cultural constraints and labour market discriminations. There is a need for policies and programmes which ensure their entrance in the emerging occupations, along with providing them entrepreneurial opportunities.
- The phenomenon of job mismatch suggests the close coordination among the various demand and supply side stakeholders of the labour market for better understanding of issues in order to formulate right policies.
- The estimates of job mismatch, especially the field of study mismatch highlights the labour market rigidities and imperfections. There is a need to design and promote policies which would ensure the six dimensions of decent work; opportunities of work, conditions of freedom, productive work, equity in work, security at work, and lastly dignity at work. The ‘merit’ norms and equal job opportunities should be ensured for the various segments of the society.
- Additional research is needed to estimate the productivity losses, hiring costs due to job mismatch, employer perspective on job mismatch and incidences of the same due to technological developments.

REFERENCES

- Alba-Ramirez, A. (1993) Mismatches in Spanish Labour Market: Over-education? *The Journal of Human Resources* 27:2, 259–278.
- Arif, G. M., M. F. Khan Kiani, and Khalid H. Sheikh (n.d.) Labour Market Dynamics in Pakistan: Evidence from the Longitudinal Data.
- Battu, H., C. Belfield, and P. J. Sloane (1999) Over Education among Graduates: A Cohort View. *Education Economics* 7, 21–38.
- Battu, H., C. Belfield, and P. J. Sloane (2000) How Well Can We Measure Graduate Over education and Its Effects? *National Institute Economic Review* 171, 82–93.
- Cabral, V. and A. Jose (2005) Skill Mismatches and Job Satisfaction. *Economics Letters* 89:1, 39–47.
- Cecilia, A. and M. A. Davia (2005) Education, Wages, and Job Satisfaction. Epunet 2005 Conference.
- Chevalier, A. and J. Lindley (2006) Over-education and the Skills of UK Graduates. (IZA Discussion Paper No. 2447).
- Clark, A. E. and A. J. Oswald (1996) Satisfaction and Comparison Income. *Journal of Public Economics* 61, 359–381.
- Dess, G. D. and J. D. Shaw (2001) Voluntary Turnover, Social Capital, and Organisational Performance. *Academy of Management Review* 26:3, 446–56.

- Dolton, P. and A. Vignoles (2000) The Incidence and Effects of Over Education in the UK Graduate Labour Market. *Economics of Education Review* 19:2, 179–198.
- Dolton, P. and M. Siles (2003) The Determinants and Consequences of Over Education. In Buchel, de Grip and Mertens (eds) *Over Education in Europe* (pp. 189–217). Cheltenham: Edward Elgar.
- Farooq, Shujaat (2011) The Utilisation of Education and Skills: Incidence and Determinants among Pakistani Graduates. *The Pakistan Development Review* 50:3, 219–244.
- Freeman, R. (1976) *The Overeducated American*. New York: Academic Press.
- Green, F. and S. McIntosh (2002) Is there a Genuine Underutilisation of Skills Amongst the Overqualified? London School of Economics.
- Groot, W. and van den B. Maasen (2000) Overeducation in the Labour Market: A Meta-Analysis. *Economics of Education Review* 19, 149–158.
- Hersch, Joni (1991) Education Match and Job Match. *The Review of Economics and Statistics* 73:1, 140–144.
- Jim, A., ROA and de W. Egbert (2005) What do Educational Mismatches Tell us about Skill Mismatches? A Cross Country Analysis. Paper for the Seminar: European Labour Market of Higher Education Graduates: Analysis of the CHEERS Project Segovia.
- Jim, A. and V. D. Velden (2001) Educational Mismatches versus Skill Mismatches: Effects on Wage, Job Satisfaction, and On-the-Job Search. *Oxford Economics Paper* 53:3, 434–452.
- Khatri, N. and C. T. Fern (2001) Explaining Employee Turnover in an Asian Context. *Human Resource Management Journal* 11:1, 54–74.
- Lambert, Eric G., L. H. Nancy, and M. B. Shannon (2001) The Impact of Job Satisfaction on Turnover Intent: A Test of a Structural Measurement Model Using a National Sample of Workers. *The Social Science Journal* 38, 233–250.
- Locke, E. A. (1976) The Nature and Causes of Job Satisfaction. In M. D. Dunnette (ed.) *Handbook of Industrial and Organisational Psychology* (Chicago, Rand-McNally).
- Lourdes, Badillo-Amador, A. Garcia-Sanchez, and L. E. Villa (2005) Mismatches in the Spanish Labour Market: Education vs. Competences Match. *International Advances in Economic Research* 11, 93–109.
- Lourdes, Badillo-Amador, and L. E. Vila-Luis (n.d.) Education Mismatch and Qualification Mismatch: Monetary and Non-Monetary Consequences for Workers.
- McGuinness, S. (2006) Over Education in the Labour Market. *Journal of Economic Surveys* 20:3, 387–418.
- Mobley, W., R. Griffeth, H. Hand, and B. Meglino (1979) Review and Conceptual Analysis of the Employee Turnover Process. *Psychological Bulletin* 86, 493–522.
- Nazli, Hina (2004) The Effects of Education, Experience and Occupation on Earnings: Evidence from Pakistan. *The Lahore Journal of Economics* 9, 1–30.
- Ng, Y. C. (2001) Overeducation and Undereducation and Their Effect on Earnings: Evidence from Hong Kong, 1986-1996. *Pacific Economic Review* 6:3, 401–418.
- Pakistan, Government of (2013) *Pakistan Labour Force Survey, 2010*. Islamabad: Federal Bureau of Statistics.

- Pakistan, Government of (2007) Employment Trends Youth. Ministry of Labour, Manpower and Overseas Pakistanis, Labour Market Information and Analysis Unit, Islamabad.
- Pakistan, Government of (2011) Pakistan Employment Trends. Ministry of Labour, Manpower and Overseas Pakistanis, Labour Market Information and Analysis Unit, Islamabad.
- Qayyum, *et al.* (2007) Growth Diagnostics in Pakistan. Pakistan Institute of Development Economics, Islamabad. (PIDE Working Paper 2006-07).
- Rahman, A. S., M. Naqvi, and M. I. Ramay (2008) Measuring Turnover Intention: A Study of IT Professionals in Pakistan. *International Review of Business Research Papers* 4:3, 45–55.
- Ross, E. and Van M. Willigen (1997) Education and the Subjective Quality of Life. *Journal of Health and Social Behaviour* 38, 275–297.
- Salop, J. and S. Steven (1976) Self-Selection and Turnover in the Labour Market. *Quarterly Journal of Economics* 90:4, 619–28.
- Sarminah, S. (2006) The Contribution of Demographic Variables: Job Characteristics and Job Satisfaction on Turnover Intentions. *Journal of International Management Studies* 1:1.
- Sloane, P. J., H. Battu, and P. T. Seaman (1999) Overeducation, Undereducation and the British Labour Force. *Applied Economics* 31:11, 1437–1453.
- Smith, C. L. (2013) The Dynamics of Labour Market Polarization. Finance and Economics Discussion Series (FEDS).
- Tsang, M. C. (1987) The Impact of Underutilisation of Education and Productivity: A Case Study of the U.S. Bell Companies. *Economics of Education Review* 6:2, 239–254.
- Verdugo, R. R. and N. T. Verdugo (1989) The Impact of Surplus Schooling on Earnings: Some Additional Findings. *Journal of Human Resources* 24:4, 629–643.
- Warr, P. (1992) Age and Occupational Well-being. *Psychology and Aging* 7, 37–45.
- Warr, P. (1987) *Work, Unemployment, and Mental Health*. Oxford: Oxford University Press.

Corrigendum

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