Exploring Factors Influencing Employability of Vocational Training Graduates in Pakistan: A Factor Analysis

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Abstract

This study was conducted to explore factors influencing the employability of vocational education graduates in Pakistan. Data were collected from 141 teachers. The data were analyzed using factor analysis approach. The principal component analysis method was applied to exploring influencing factors. The following six factors were found influencing the employability of vocational graduates such as education mismatch, market need, relevant experience, job creation, policy and skills training. Based on the findings it is recommended that the vocational training curriculum needs to be updated and students need to be provided practical experiences through field-based learning. There is a need to link the curriculum of the vocational training institutions with industry. There is a need to provide skill-based training rather than theoretical teaching to the students before they enter the job market. Last but not least, demand-based policies need to be made and implemented for promoting skill development of the graduates.

Key Words: Vocational Education, Employability, Factor Analysis, Job Market

Introduction

Skill training of students is gaining greater attention all over the world as well as in Pakistan (Kazmi, 2007b). Better training and education provide a more capable and competent workforce to the industry (Hameed-ur-Rehman & Sewani, 2013). Vocational training enhances the efficiency and skills of labours and prepares them for better participation in economic development. Research has indicated that vocational training in South Asia, especially Pakistan does not support high economic growth and increasing demands of the current global and local market due to low quality of teamwork skills, communication skills and so on (Khilji *et*

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al., 2012). In the last decade, the demand for skilled manpower has tremendously increased than ever before. This development has necessitated urgent responses from the technical and vocational training institutions to bring about the desired change in the graduates as per the current job market needs (Reeve, 2016).
Vocational training is a job-related training that takes place for raising people's productivity both on the job and off the job (Tsang, 1997). Generally, vocational education gives some specialised professional knowledge and skills to students in a vocational school or institute (Mortaki, 2012). More specifically speaking, giving training on different vocations helps prepare students for different professional trades and vocations. It refers to the training institutes where students are educated and trained to become skilled professionals. The concept of vocational education is founded on the philosophy of experiential education. Plato and Aristotle also advocated practical education for producing such people who are able to contribute towards their societies and communities (Aliaga *et al.*, 2014; Fedorov & Tretyakova, 2016). Vocational education is a process of combination of skills, knowledge, problem solving and entrepreneurship for preparing students for creativity and production of new ideas (Malamud & Pop-Eleches, 2010). Along with developing professional skills, students also develop attitudes, values and behaviours that enable them to become informed citizens and productive workers (Chappell, 2003). Although, vocational education aims at preparing students with outcome-based education for better future careers of students (Silcox, 1995). The goals of vocational education are stipulated in all the education policies of Pakistan. Students find it difficult to find jobs in the current competitive job market. Little is known about the factors influencing the employability of vocational graduates in Pakistani contexts. There is a need for more comprehensive investigations into this area in order to provide evidence for overcoming the issue.

The goals of vocational education are broader and comprehensive. It is an employment or occupation-based education, vocational training or technical education. Participation in service activities develops students' academic and vocational skills through which they address real life problems (Bringle & Hatcher, 2000). The goals of vocational education and service-learning are much alike. The basic aim of vocational education is to prepare people for different professional jobs. As a result governments are increasingly investing in vocational education (Kincheloe, 1999). Unlike general education which is more theoretical and limited, the philosophy of vocational education is based on the notion of hands on learning experience. This type of classrooms, laboratories and field-related experiences a learning atmosphere is created that sharpens skills and knowledge of students in real-world situations. The foundation of vocational education is based on the philosophy of preparing quality work-force or citizens who have strong professional skills. Many principles basically derive the technical or vocational education which has been divided into four categories: people, programmes, process and values (Martinez Jr, 2007). In some studies, it has been found that the

outcomes of vocational education in Asian countries are mixed. Among these countries, Japan, Singapore and Korea are the best examples having developed vocational educational systems (Aggarwal, 2013).

Training of workforce is a passport for better employment. Many Asians have achieved comparatively better and viable economic systems due employable technical skills and skilled manpower population (Ul Haq, 2000). Despite, this, the system of vocational education in South Asia is deplorable. The situation is worse in countries like India, Bangladesh and Pakistan (Tilak *et al.*, 2002). More specifically, skill development has been the most neglected area in the Pakistani education system. There is more emphasis on improving vocational and job skills but the results are not promising (Kemal, 2005a). Research (Saigol, 2014; Uzair-ul-Hassan & Noreen, 2013a) has indicated that vocational education in Pakistan faces negligence, the most important one is the lack of a curriculum that connects theory to practice. There is a lack of linkages between the vocational schools and industry (Amjad *et al.*, 2005; Shah *et al.*, 2011a). Research has indicated that employability can be enhanced through creating an enabling teaching and learning environment, however, the system of vocational education here. It is highly characterized by low enrolment, more drop-outs, poor quality of faculty, gender disparity and low budgetary allocations (Aggrawal, 2013). The vocational training is unable to support economic growth and need of the job market. Hence, the system of vocational education needs fundamental review and restructuring (Faridi *et al.*, 2010).

Literature Review

Today, educational policymakers are increasingly stressing on the crucial role of vocational or skill-based education in national development. One of the major contributions of vocational training is employability or work-related skill development of students (Kazmi, 2007). Vocational Education is typically a skilled driven education. In Pakistan, for the development of a skilled workforce, skill training is introduced. This comprises of three years of education after secondary education. The vocational training courses have different durations such as six-month certificate course, twelve months and eighteen months certificate after middle or secondary education. Pakistan is a middle-income country. There is a need to pay attention to the vocationalization of education in the country. This will increase the capacities and skills of its work-force and better output (Kazmi, 2007). Vocational education is important to bridge the skill gap between world of the work and education as well as between school and society. Recognizing the importance of vocational education, different attempts have been made to promote vocational educational education around the world (Eichhorst *et al.*, 2015). It is considered an important yardstick to measure the development of a country. For this purpose occupational skills play a vital role. These skills ensure maximum use

of resources and enhanced productivity improves employees performance which in turn reduces the gap between demand and supply (Zimmermann *et al.*, 2013). Workers with refined professional skills can communicate well, solve problems effectively, think on their feet, lead others through team-work exercises, provide critical feedback, motivate their fellows and become models for other employees in a fast-changing work environment(Keller *et al.*, 2011). World Health Organization has reported that skilled workers build healthy relationships in work-places. Studies have demonstrated that generally these skills help workers to work smart (Coetzee & De Villiers, 2010). One of the reasons for today's' graduates do not find job the job market is lack of professional skills. According to Education for All Global Monitoring Report, there is a huge skill gap among Pakistani graduates which makes them inefficient for the current knowledge-based world of work (Shah *et al.*, 2011b). A total of 12 million ranging from age 15 to 24 years in Pakistan lack basic work skills such as communication, decision-making, problem solving and so on which is the second-highest number in the developing countries (Husain *et al.*, 2010).

Recruiting trained, skilled and qualified employees plays a key role in increased productivity and profitability for organizations in the job market. This trend can be observed both in developed and developing countries. Therefore, investments in higher education are on the increase all over the world. However, on the other side, there is high scale unemployment among Pakistani youth graduating from the vocational and technical institutions. There is a lack of vocational knowledge, mastery of job-related competency, potential for learning and skills among the graduates(Ansari & Wu, 2013b). Employers assess and evaluate the abilities and attributes of graduates when they enter the job market or seek employment. Based on this evaluation, they judge the effectiveness of educational institutions and rate the graduates. Employability can be affected by different factors such as career development opportunity, education, learning and experiences of individuals. The degree of subject-related knowledge. Level of understanding, generic skills and exposure also influence employability. Studies have reported that emotional factors, reflective skills also influence individuals at a certain level (Dacre Pool & Qualter, 2013) (Research has further revealed that employability is influenced by level of education, type of institutions attended, mode and courses study, location and mobility of graduates, social class and communication abilities. These factors may affect the employment process of job seekers and job providers along with performance, gender, educational level, communication skills and work-related experience (El Mansour & Dean, 2016).

A knowledgeable and professionally skilled workforce has great importance for a country. Unfortunately, our workforce has low skills to compete in today's globalised world. There is an immediate need to improve the knowledge and skills of graduates in Pakistan (Kazmi, 2007a). Countries like Singapore, Taiwan, Thailand, Korea and Malaysia achieved high economic growth due to their high

investment in human capital. Pakistan has lagged behind these countries in the region due to large unskilled labour force. The education economy has remained unsuccessful to produce competent managers, professionals and knowledgeable workforce to achieve a competitive position in the current global economy (Kemal, 2005b). The Higher Education Commission reported that in 2009 out of 496207 graduates, the job participation rate was 33.0% which shows the lowest absorbance rate of the labour market. Similarly, Education for All Global Monitoring has reported that there is a huge skill gap among Pakistani graduates which makes them inefficient for the current knowledge-based world work. A total of 12 million ranging from age 15 to 24 years lack basic life skills. It is the highest number in developing countries (Ansari, & Wu, 2013).

The government has recognized the value of work skills that are transferable to specific occupations and vocations (Ansari & Wu, 2013a; Kazmi, 2007a). The research shows that a large population of youth is ready to enter the job market. But these youths are deficient in appropriate job-related skills such as teamwork, communication, decision-making and problem-solving (Kemal, 2005b; Uzair-ul-Hassan & Noreen, 2013b). In today's job market, the types of skills needed for better job performance are also undergoing rapid changes. A better skilled workforce is given preference over the semi-skilled or unskilled workforce. Hence, researchers argue that to secure a respectable position in the current knowledge-based market, Pakistan has to improve the skills of its labour force. For this purpose, it is essential to promote skill-based education (Amjad *et al.*, 2005; Dean, 2011; Kaleem *et al.*, 2013). Although over a few years, the government of Pakistan has attempted to modify and expand the education sector. Many projects have been designed and implemented (Mustafa *et al.*, 2005). Nevertheless, despite these efforts, Pakistan is still in a skill trap. In view of researchers, since establishment, Pakistan neither prioritized skill development through education nor produced labour force equipped with necessary professional skills such as teamwork, communication and leadership necessary to function successfully in a democratic society (Amjad *et al.*, 2005; Kemal, 2005b). On the other hand, there are many Vocational Training Institutes (VTIs) in Pakistan. Over the years, the main focus of these VTIs has been only increased enrolment instead of quality skill training (Kazmi, 2007a). Higher Education Commission of Pakistan also emphasizes on students' critical thinking, communication, teamwork-skills development (Raza & Naqvi, 2011). Unfortunately, recent studies have reported that educational institutions in Pakistan encourage rote learning and passive knowledge accumulation. The process of education is characterized by simply transmission of textbook information. The instructional process lacks reflection and critical thinking and does not prepare better citizens having employability skills, sense of teamwork and civic responsibility (Hina *et al.*; Kaukab, 2012; Uzair-ul-Hassan & Noreen, 2013b).

The work-related skills such as teamwork, problem-solving and civic competencies are essential for the development of any society. These skills are considered top-rated employability skills in the current job market (Al Mamun, 2012; Calvert & Kurji, 2012; Kavanagh & Drennan, 2008). Recent research has also termed communication, problem-solving and decision-making skills as the top employability skills in today's job market (Ilias *et al.*, 2012). Since the establishment of Pakistan, development and service to the society were declared as the main goals of education in Pakistan. But the ineffective educational polices, political exigencies and inconsistent political commitments, the dream of developing quality skilled manpower could not be materialized. Pakistan occupies the lowest position in terms of qualified skilled manpower in the region among other competitors (Kazmi, 2007). Hence, many studies have consistently reported that the education system of Pakistan has virtually failed to achieve its goals of civic responsibility and skill development of students. Higher Education Commission of Pakistan has recently stated that in 2009 out of 496207 graduates, the job participation rate was 33.0% which shows the lowest absorbance rate of the labour market (Dean, 2007; Ahmad, 2008).

There is a chronic skill gap in Pakistan (Kazmi, 2007a). Pakistan stands at the lowest level in terms of human development in the region (Amjad, 2006; Khan *et al.*, 2005). Writers suggest that Pakistan should create conditions necessary for creativity and innovation in its education system which is vital to enter the knowledge economy of the global market. Ambitiously, the vision 2030 educational policy document envisions Pakistan to be a developed, industrialized and democratic state. This framework also recognizes the importance of developing the work-related skills such as civic skills, work attitudes and teamwork (Kazmi, 2007a).

Pakistan has the most lower and poor skilledbased education training and development system (Kemal, 2005b). Whereas, modern democratic societies expect their citizens to have essential life skills (Calvert & Kurji, 2012). Today's employers and communities also expect educational institutions for graduates who have effective work-related skills such as effective communication, interpersonal, teamwork, problem-solving skills, a sense of civic responsibility and so on (Falk, 2012; Kaukab, 2012; Rubin & Giarelli, 2013). This study investigates the effect of service-learning on teamwork in Pakistan. Furthermore, there are increasing pieces of evidences that Pakistan is currently experiencing the worst skill gap due to low-level skill trap (Kazmi, 2007; Uzair-ul- Hassan & Noreen, 2013). To secure a competitive position in the labour market, Pakistan needs a major shift to skilled based education (Ansari & Wu, 2013a; Mustafa *et al.*, 2005). Writers have referred to a report of the Asian Development Bank there is a chronic mismatch between educational theory and practice in Pakistan. This situation has resulted in widening gaps in work and civic skills among graduates. Hence, this study investigated the factors influencing the employability of vocational graduates in Pakistan.

Problem Statement

The current job market employers and organizations are increasingly looking for such graduates who have professional skills. Vocational education is a skill-based and practical education but in Pakistan, it produces graduates who are poorly skilled to find jobs in the current job market (Javied & Hyder, 2009; Park, 2005). Another research has reported that Pakistani vocational training does not effectively enhance job-related skills of its students (Ansari & Wu, 2013a; Kazmi, 2007a). This situation is worse in the context of Pakistan where students graduating from vocational institutes are deficient in work-related skills. This study aimed at exploring factors influencing employability of vocational graduates in Pakistan.

Research Purpose

This study aims to examine factors influencing employability of vocational graduates in Pakistan by using factor analysis approach.

Methods

Participants

The study population comprised of vocational training institutes' faculty members. Out of the population,141 teachers were sampled based on (Krejcie & Morgan, 1970) sample method. The respondents were randomly selected from the accessible population. Out of the 141 questionnaires distributed among the sample, all questionnaires were received with a 100% response rate.

Measure

A survey questionnaire was developed based on a thorough review of literature and experts were engaged for content validation of the instrument. Based on their feedback few items were refined. Finally, a twenty item questionnaire was constructed to collect data.

Validity and Reliability

The Cronbach's alpha test was carried out for reliability testing which was.70 and was at an acceptable range (Hinkin, 1995; Nunally, 1978; Panayides, 2013). According to (Churchill Jr, 1979).60 is satisfactory internal consistency reliability

Data Analysis

The data was analyzed using exploratory factor analysis technique. However, means, standard deviations were also calculated. Before statistical analysis, kurtosis and skewness were calculated to check the data normality. The kurtosis range +-03 is a commonly used threshold point for ensuring data normality. The data met the entire normality requirement for undertaking factor analysis.

Factor Analysis

Factor analysis method was used to explore dimensions of the scale foe assessing the factors (Hair et al, 2006).

Table 2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.917
Bartlett's Test of Sphericity	Approx. Chi-Square	4360.214
	Df	780
	Sig.	.000

The KMO .91 and Bartlett's Test of Sphericity significant at $p<0.000$ indicates that the data and sampled was adequate to carry out exploratory factor analysis as shown in Table 2.

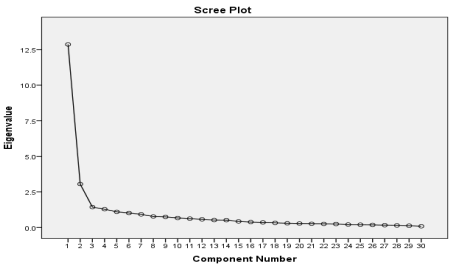

Figure 1: Scree Plot

On the basis of the slop of the scree plot, six influencing factors were extracted for employability among vocational graduates.

Table 3. Communalities

	Initial	Extraction	Corrected Item Total Correlation
1	1.000	.727	.842
2	1.000	.743	.780
3	1.000	.674	.834

4	1.000	.780	.784
5	1.000	.695	.641
6	1.000	.596	.721
7	1.000	.632	.762
8	1.000	.738	.602
9	1.000	.728	.739
10	1.000	.623	.541
11	1.000	.696	.538
12	1.000	.647	.496
13	1.000	.756	.708
14	1.000	.688	.746
15	1.000	.772	.728
16	1.000	.627	.786
17	1.000	.671	.589
18	1.000	.569	.688
19	1.000	.579	.423
20	1.000	.726	.567
21	1.000	.810	.411
22	1.000	.767	.729
23	1.000	.779	.751
24	1.000	.776	.687
25	1.000	.568	.691
26	1.000	.599	.675
27	1.000	.674	.440
28	1.000	.691	.584
29	1.000	.688	.613
30	1.000	.722	.498

Table 2 indicates that the high values for communalities and the higher correlation among the variables show that the data is good for analysis.

Table 3. Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.860	42.867	42.867	5.654	18.848	18.848
2	3.050	10.168	53.035	3.915	13.052	31.900
3	1.432	4.773	57.809	3.493	11.643	43.542
4	1.284	4.279	62.087	3.421	11.403	54.946
5	1.099	3.662	65.749	2.464	8.214	63.160
6	1.017	3.389	69.138	1.794	5.978	69.138
7	.923	3.078	72.216			
8	.774	2.580	74.796			

9	.744	2.479	77.276			
10	.667	2.223	79.499			
11	.622	2.074	81.573			
12	.571	1.904	83.478			
13	.522	1.739	85.217			
14	.515	1.717	86.934			
15	.426	1.419	88.353			
16	.382	1.273	89.625			
17	.358	1.193	90.818			
18	.325	1.085	91.903			
19	.294	.981	92.883			
20	.279	.930	93.813			
21	.262	.872	94.685			
22	.251	.837	95.522			
23	.244	.815	96.336			
24	.207	.690	97.027			
25	.196	.654	97.681			
26	.180	.601	98.281			
27	.161	.537	98.818			
28	.144	.480	99.298			
29	.125	.417	99.714			
30	.086	.286	100.000			

Table 3 indicates that six fcators were explored based on eignevalues being gerater than 1. Kaiser's critierion was used as a rule of thumb to retain the factors (Kaiser, 1960).

Table 4. Rotated Component Matrix[a]

	Component					
	1	**2**	**3**	**4**	**5**	**6**
1					.638	
2					.447	
3					.409	
4					.689	
5					.466	
6				.543		
7				.502		
8				.619		
9				.557		
10				.597		
11		.430				
12		.488				
13		.576				
14		.502				
15		.619				
16		.634				
17						.716

18						.741
19						.635
20						.745
21	.807					
22	.773					
23	.793					
24	.735					
25			.631			
26			.624			
27			.581			
28			.626			
29			.595			
30			.639			
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 9 iterations.						

Table 4 indicates the Rotated Component Matrix (RCM) showing the factor loadings for all variables relating to the six factors. The RCA method showed that items 21 to 24 loaded on factor 1 having loadings ranging from .735 to .807. Based on the nature of the items, this factor was named 'education mismatch'. Items 11 to 16 loaded on factor 2 having loadings ranging from .430 to.634. Based on the nature of the items, this factor was named 'market need'. Items 25 to 30 loaded on factor 3 having loadings ranging from .631 to .639. Based on the items, the factor was named 'relevant experience'. Items 6 to 10 loaded on factor 4 having loadings ranging from .502 to .619. Based on the items the factor was named 'job creation'. Items 1 to 5 loaded on factor 5 having loadings ranging from .438 to .689. Based on the items, the factor was named 'policy'. Items 17 to 20 loaded on factor 6 having loadings ranging from .635 to .745. Based on the items, this factor was named 'skills training'.

Table 5. Means, Standard Deviation and Reliability for the Factors

S.No	Dimension	No of items	Mean	SD	alpha	no
1	Education Mismatch	04	12.59	4.23	0.91	141
2	Market Need	06	12.42	2.35	0.75	141
3	Relevant Experience	06	08.17	2.36	0.86	141
4	Job Creation	05	10.97	1.83	0.83	141
5	Education Policy	05	10.54	3.22	0.87	141
6	Skills training	04	08.42	2.66	0.73	141

Descriptive statistics were calculated after exploring the factors. Six different factors were identified from the current data set influencing the employability of vocational graduates. Additionally, means, standard deviation and reliability were also estimated for each factor in the scale. The higher mean ranging from 8.17 to 12.59 indicated that the respondents strongly agreed that education mismatch,

market need, relevant experience, job creation, policy and skills training were the six key factors that influenced the employability of vocational graduates in the current job market. Crobach's alpha for each factor ranged from 0.73 to 0.91 showing a highly satisfactory level for the construct reliability (Kline, 1999).

Discussion

This study revealed that six factors were found to influence the employability of vocational graduates in Pakistan. These factors were education mismatch, market need, relevant experience, job creation, policy and skills training. The results of this study establish previous findings that graduates of Pakistani schools have poor civic sense and work-related skills (Dean, 2007; Hina *et al.*; Naseer, 2012). Previous studies in the Pakistani context have already indicated that the process of teaching and learning is characterized by a traditional mode of education. The classroom at all levels of the education system is dominated by a passive learning process. Students are asked to parrot the content. There is a lack of in-depth discussion, critical thinking and reflections or relate the new knowledge with own life experiences or the world they live in.

The results of this study may be used as evidence to improve the curriculum of vocational education in Pakistan. The results provide a sound empirical base to policy makers, administrators of vocational education and researchers to understand the critical influencing factors affecting the employability of vocational education graduates. The results also help improve the performance of vocational graduates by preparing them for the competitive job market.

Conclusion

There is an urgent need to provide practical learning experiences to the vocational graduates preferably through field-based learning instead of theoretical and traditional classroom lecture-based learning. There is a need to provide internship and job opportunities to the graduates' to polish their relevant skills and competencies before they enter the job market. The existing linkages should be further enhanced and strengthened. In this way, students would get wider practical opportunities for developing skills and getting knowledge before they enter the job market. For implementing these recommendations, there is a need to develop demand-based policies for promoting human resource development. The study was done in vocational education filed based on a limited number of samples in Punjab, the province of Pakistan, which has a wider socio-cultural and geographical variations, hence, the results may not be easily generalized to other parts of Pakistan.

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