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THE MEDIATING ROLE OF CAREER COMPETENCIES BETWEEN INSTITUTIONAL LEARNING ENVIRONMENT AND CAREER SUCCESS: A PROCESS MODEL FOR PRODUCING TVET SKILLED WORKFORCE

A. Mahmood[1], H. Ali[2], A. Bilal[3]
[1]University of Engineering and Technology, Lahore Pakistan
[2]Technical Education and Vocational Training Authority (TEVTA), Lahore, Pakistan
[3]Lahore School of Management, Lahore, Pakistan

ABSTRACT

Although, TVET sector is producing a large number of graduates to fulfil the industries' needs but the future human-resource is not matching with the industries expectations. This gap leads to under-employment (low scale jobs / lower wages) or unemployment, and ultimately an unsuccessful career path. This dilemma raises the question on TVET sector infrastructure with regard to curriculum design, learning facility, pre-admission and post-admission career counseling, and development of individual's competencies etc. This study aims at contributing to the body of existing literature, specifically in developing countries, by exploring the impact of learning environment on the career success of TVET graduates with the mediating role of career competencies. For the empirical validation of the proposed hypotheses, the data from TVET graduates, self-employed or working in different industries, were collected using already established measures, taken from existing body of literature. A total of 500 respondents were targeted using stratified sampling approach.

Results suggest that practice based curriculum has a positive impact on objective career success. The second factor of learning environment, inquiry based curriculum, has a positive impact on objective career success via career adjustment and control, and communication and networking.

This is the first study of its domain that focuses on TVET sector graduate's success factors in developing countries, especially in Pakistan. The findings have some imperative guidelines for TVET Board of Management to improve the deficiencies in the institutional infrastructure.

Keywords: *TVET, learning environment, Practice based curriculum, Inquiry based curriculum, Internship, Career guidance and dialogue, Career competencies, Career success.*

1) INTRODUCTION

Education is essential for a country's development, accounting for monumental impact, providing current and future economic sustainability. Since ages mankind has been striving for excellence in education. Many models and pedagogies are practiced around the globe. Scholars came up with techniques modulates, curricula based methods and with structured content, fulfilling the need to achieve; social, political, professional, moral and ethical oriented results. Yet, there is no one solution that fits all scenarios or fields of work. The present-day economic environment, considered as ever-growing market stresses, angular organizations and swift variations has made compulsory for organizations to maintain competitiveness and agility (Lazarova & Taylor, 2009). It has consequences for personal Career Development and Success. The dominant opinion in current career theories is 'new careers' which gives assurance of job security and employability (Inkson & Clark, 2010). Workers can attain employability through gaining relevant skills, abilities , knowledge and other specifications demanded by present and forthcoming employers and therefore incorporates an individual's potential (Fugate & Kinicki, 2008). Therefore it can be observed as a major aspect in considering present-day career success (Hall, 2004). Though, the studies on career success and employability has developed opinion generally parallel to each other, indicating some deficiency of understanding in to how career success and employability are linked to each other (Heijde & Van Der Heijden, 2006). It is observed that minute research examined joint effects of personal and organizational initiatives in lieu of improvement in employability (De Vos, Dewettinck, & Buyens, 2009). In the labor market and society as a whole the individuals are expected to exhibit much self- directedness (Kuijpers & Scheerens, 2006a). Most of the organizations require qualities such as ambition, passion, motivation and self-directedness while offering a job (Marinka Kuijpers & Meijers, 2012). Employers now expect form new employees to possess much more related knowledge, skills and intrinsic motivation than in past (Bailey, Hughes, & Moore, 2004). The level of skills and knowledge of students (Lairio & Penttinen 2006) have serious doubts.

It is found (Zijlstra & Meijers, 2006) there is sever lack of intrinsic motivation amongst most of individuals in American educational institutions. The most important reason behind this disappointing fact is that majority of students fails to create a vibrant career ambition while during education, leading to relatively haphazard career wishes (Winters, Meijers, Kuijpers, & Baert, 2009). The institutions does not leave this important task on the individual (student) as the research on brains show that students without guidance are rarely able to do career wishes (Schwartz, 2004). At the moment, it is vibrant that those managers' having the responsibility for providing guidance contains no or little vision about career counselling and guidance. Because of the clear vision there is no consensus regarding what establishes effectively counselling and guidance about career in an educational and employment context (Watts, 2008).

Technical and vocational education is designed to achieve calculated targets, abilities, skills, experience that are vital for a particular profession, industry or field of work (Adams, 2007). Skills development and formation structures are imperative, since they contribute to personal, organizational and countrywide throughput and earnings (Raphulu, 2011). TVET is defined as building skills needed for a particular kind of occupation or job (Zelloth, 2014). Varaprasad (2016) describes one of the main purposes of TVET is to personalize and individualize instructions. TVET sector is developed in Pakistan for the provision of skilled workforce and comprised of six months to there year courses. The vocational courses start after elementary school or secondary school certificate while technical course especially DAE (Diploma of Associate Engineer) after the secondary school certificate. TVET sector certificates and diplomas comprise of almost all trades and technologies most of them for boys and some for girls.

2) LITERATURE REVIEW

A question always people ask to each other, what career is? Career emphases on upward growth of persons via developed order of position or level (Landau & Hammer, 1986). Career of an individual developed through different stages based on age and each stage is characterized by psychological needs, unique apprehensions and evolving responsibilities (Giannantonio & Hurley-Hanson, 2006).

Work organizations have been changed dramatically during last twenty years. As a result job security has declined and the promotions become harder (Valcour & Tolbert, 2003). What characterize success in a career? It has been elaborated as "positive psychological or job related results or successes that an individual accumulates as an outcome of job experiences" (Seibert & Kraimer, 2001). The given definition mentions the perceived and actual career success and signifies subjective and objective components in the way of the theoretical distinction. Success can be elaborated in two generic types i.e. objective and subjective.

OCS (Objective Career Success) refers to what society and others people perceived about an individual's career (Gould & Penley, 1984). We can elaborate it as external viewpoint that describes more or less physical signs of a person's career position (Michael B. Arthur, Khapova, & Wilderom, 2005). External career success is related to formal positions and social role which reflects social identifications. The career (Callanan & Benzing, 2004) success measured with general standards i.e. position, pay, promotion (Heslin, 2003). What is Subjective career success? Subjective career success may be referred as an individual's internal clarifications, perspectives and assessment of their careers (Michael B. Arthur et al., 2005). (Judge, KAMMEYER-MUELLER, & Bretz, 2004) mentions career success as assessing concept–its result is contingent on who does the judging.

Institutional Learning Environment is of fundamental importance in the development of one's career. In this study learning environment consist of following four items: practice based curriculum, inquiry based curriculum, internship and career guidance and counselling. **Practice Based curriculum** invites the learners to develop understanding of phenomena or develop solution by calling and limited number of concepts and applying by crosscutting thoughts by using engineering and technology practices over many years by providing student an opportunity to construct deep understanding (Pellegrino James & Hilton, 2012) and practice it again and again. Now a days very fewer learners have opportunity to involve in depth concepts and their practices, especially which concept are crucial for the science concepts building such that developing models, fabricating their clarifications and fetching in argument form evidence (Banilower, Nelson, Trygstad, Smith, & Smith, 2013). The second is Inquiry based curriculum, which tends to the open

question environment where pupil are asked different question rather than being told with a lot of information (Kilpatrick, Johns, Millar, Routley, & Lê, 2011). In this way of learning students work in groups by collaboration and cooperation to recognize what they actually need to learn for solving problems, gaining research abilities, and augment trade-off capacity (Avsec & Kocijancic, 2014). It can be implemented effectively by demonstrating through learner's performance as construction of worthy questions, identification of evidence, organized explanation, deciding delusions and management of perception conversion (Klionsky et al., 2012). The third factor is internship program which refers to prepare the students for realities of workplace and provide them with the opportunities to test the concepts and skills that they have acquired. Internship develops the new sources of opportunities among students and interns (Agboola & Ademiluyi, 2016). The fourth factor career guidance and dialogue, a person- environment approach control in which knowledge about person and environment for the very most part is not based on real–life experiences with work but is generated by devices and occupational and conveyed or sending the information from one person to another by uniform methods that are not directed at the formation of personal meaning versus conversation (Chatterjee & Hadi, 2015). It is vital for the students at the time of selection of career that they should be well aware of what they actually want in their career and life (Carstens et al., 2009).

The learned proficiencies that plays an effective role in person's career management and elaborates as knowledge and behavioral depositories including career planning, goal setting, self-knowing, job enactment, work related skills, organizational politics, networking, career guidance, seeking feedback and self-presentation that are involved in assisting specific career related results (Francis-Smythe, Haase, Thomas, & Steele, 2013). (Kong, Cheung, & Song, 2012) has find mediating role of career competencies between career management and career success.

The first career competency is 'career development' which gives the career path in which one individual can take the decision about future. Through career development student gain the positive motivation it helps then in every field of life (Kuijpers, Meijers, and Gundy 2011). The literature highlights sixty-five published book on career development and helping people identify their course of career, between fifteenth to

nineteenth centuries (Varaprasad, 2016). The second competency is 'Adjustment and Control' that refers to the process where the environment or labor market is in transmission or constant change, the individual making informed decision is called Career adaptability (Bimrose, Brown, Barnes, & Hughes, 2011). The ability to shift from one working role and master the other is called career adjustment and control. To become actually flexible individuals necessarily look at possibilities to improve his ability, skills and experience. We can elaborate willingness as readiness for coming changes. Another important factor is ability to change, in many others view willingness and ability work side by side. Career guide provides the opportunities for both men and women there is no gender difference for career control (Meijers, Kuijpers, & Gundy, 2013). Career adjustment enables how an individual choose their career, think about the tool and directs him or herself into the chosen field. Career Controlling tells how to remain balanced and responsible while performing job tasks. Third competency 'Teamwork and Leadership' actually refers to the workplace attitude. According to author there are two types of attitude that is positive or negative. Positive attitude motivates the students for their career development and career growth it reinforces the students for their future goals and mission. Lastly, 'Communication and Networking' has an extra ordinary attraction on its own in 21st century. No education and learning is complete without communication and networking. Networking itself drag attention towards social media and related term (Sarkar & Craig, 2006). Moreover, while discussing TVET (technical and vocational education and training) sector needs to become dynamic as technology rapidly changes. Research adds that it has to be more developed for employment, career growth, social prospects and many other dynamics which initiate the need of reforms and expansion of TVET (Balatti & Black, 2011) (Kuijpers, Schyns, & Scheerens, 2006), says in this regard objective career success is what a person believe to achieve successive hierarchical position in his career (Abele & Spurk, 2009). Terms are to wider to show relationship, studies have been conducted to evaluate all related terms even more closely such as Kuijpers, Meijers, and Gundy 2011. Kuijpers, Meijers, and Gundy 2011, say that the world is growing technologically faster, so there is a need of communication and networking among different levels of business. These relationships cold be formal or informal; cooperative or competitive but depends on the mutual exchange of benefits. It could be advice about tasks, confidential information, strategic statistics which can enhance a parson's job performance and career (Wolff, Moser, & Grau, 2008). Many

studies evident that networking is positively associated with career success (Wolff & Moser, 2009).

Based on the literature this study suggests following hypotheses:

H_1: Learning environment – practice base curriculum, inquiry base curriculum, internship and career guidance & dialogue – has impact on career success – objective career success and subjective career success.

H_2: Career competency-career development, career adjustment & control, teamwork & leadership and communication & network – mediate the relationship between learning environment – practice base curriculum, inquiry base curriculum, internship and career guidance & dialogue-and career success-objective career success and subjective career success.

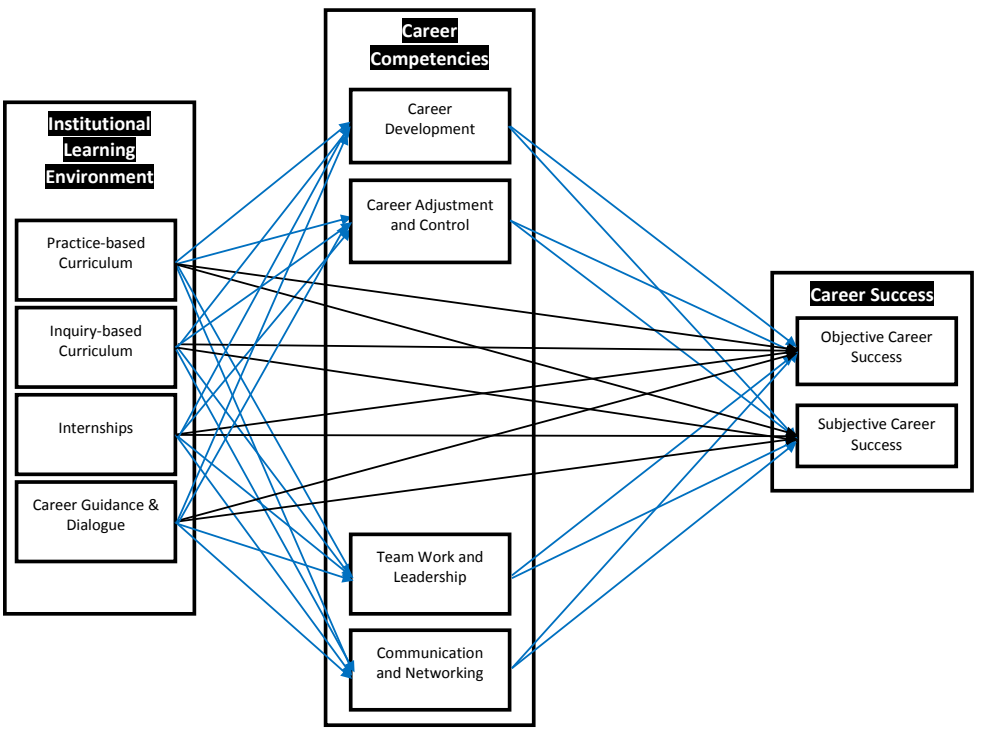

Figure 1: Study Model

3) RESEARCH METHODOLOGY

With reference to the nature of our study, quantitative research approach was selected followed by cross sectional research design with non-contrived study settings in order to conduct research. Data was collected through self-administered compiled survey questionnaire based on previously well-developed scales. Population represents the entire group of objects which a researcher wants to observe in his study. All the TEVTA graduates who were currently doing job either in industrial sector or academia at any position level were our study population. This study applied stratified probability sampling technique through following guidelines provided by Saunders (2011). Following stratified sampling technique, 5 strata were created on the base of technology types in which students had graduated which are Civil Technology, Electrical Technology, Mechanical Technology, Chemical Technology and Other Technology. According to Kline (2011), five respondents against each construct are enough to test such a complex model based on structural equation modeling. This study total constructs are 94, so 470 respondents were necessary to perform analysis. Due to fear of missing value questionnaires, 500 questions were distributed among above said 5 strata in accordance with proportion of number of students, in each technology, with total students. Data was collected from selected respondents through District Placement Officers of TEVTA-Punjab, 370 responses received but only 316 responses were useable as 54 responses have missing values and were not usable for the analysis of this research, so, final response rate was 71% ($\frac{370-54}{500-54} \times 100$) as per Bryman and Bell (2011). In term of gender, all the respondents were male. The age of the majority of the respondents ranged between 18-25 years (18-25 years 51.3%, 26-35 years 42.4%, 36-45 years 6.3% respondents). Of the total sample, all attended Technical (DAE). Regarding occupation; 7% respondents were self-employed while 93% respondents were employed in some organizations. Regarding Job Position, 59.2% respondents were at technician level, 30.7% at supervisory level, and 10.1% were working at managerial level. In term of monthly earning, majority of the respondents have monthly earning of PAK Rs.15-30 Thousand. Majority of the respondents were unmarried and have no children.

The instrument drafted on the base of research gaps we have find during the literature review of this study included 94 items and 10 variables.

Original scale used 7-point Likert scale, ranging from 1 to 7 anchors strongly disagree to strongly agree, for avoiding the apparent difficulty of identifying the variance between the intervals of 7-point Likert scale (Arslan & Altuna, 2010). Consequently, our final questionnaire comprise 94 questions that where segrigated into independent, dependent and mediating variables. Practice Based Curriculum was measured by 9 items adopted from (Marinka Kuijpers & Meijers, 2012), Inquiry Based Curriculum was measured by 10 items adopted from (Marinka Kuijpers & Meijers, 2012). Internship was measured by 7 items adopted from (Deborah F. Beard, 2007). Career Guidance and Dialogue was measured by 12 items adopted from (Haase, S. 2007) Career Development includes 3 dimentions measured by 15 item; The first dimension Career Reflection was measured by 5 items adopted form (M. A. C. T. Kuijpers et al., 2006), Work Exploration was measured by 5 items adopted form (M. A. C. T. Kuijpers et al., 2006), Self-Knowledge was measured by 5 items adopted form (Haase, 2007). Career Adjustment and Controll incldes 4 dimentions and measured by 18 items with Cronbach's α value 0.850. Its first dimension is Flexability, was measured by 5 items adopted form (Bhattacharya, Gibson, & Doty, 2005), Learning Ability was measured by 5 items adopted form (M. A. C. T. Kuijpers et al., 2006), Reflective Behaviour was measured by 5 items adopted form (Verdonschot, 2006), Career Pro-action was measured by 6 items adopted form (Kuijpers et al., 2006). Team Working and Leadership was measured by 5 items adopted form (Serirat, 2009). Communication and Networking was measured by 8 items adopted form (Winters et al., 2009; Wolff & Moser, 2009; Wolff, Schneider-Rahm, & Forret, 2011), Objective Career Success was measured by 5 items adopted form (Lertwannawit, Serirat, & Pholpantin, 2011), Subjective Career Success was measured by 5 items adopted form (Lertwannawit et al., 2011).

4) RESULTS AND DISCUSSION

SEM was used to validate the proposed hypotheses. To run SEM, this study followed (Anderson & Gerbing, 1988) two-step mechanism. Descriptive statistics results are showing that there is no any kind of normality issue in the collected data. In addition to it, in order to assess data reliability Cronbach's alpha, (1951) test was applied. Summarized results of descriptive statistics including reliability values of each variable are shown in Table 1 named descriptive statistics.

Table 1: Descriptive Statistics

Variables	No. of Items	Mean	Standard Deviation	Cronbach's α value
Career Development (CD)	3	3.912	0.820	0.848
Work Exploration (WE)	5	3.665	0.963	0.929
Self-Knowledge (SK)	5	4.091	0.973	0.969
Career Reflection (CR)	5	3.981	0.870	0.959
Adjustment and Control (AC)	4	3.858	0.816	0.850
Flexibility (FL)	4	3.725	0.808	0.871
Learn Ability (LA)	4	4.027	1.035	0.968
Reflective Behavior (RB)	4	4.035	1.016	0.959
Career Pro-action (CP)	6	3.643	1.047	0.956
Communication and Networking (CN)	8	3.438	0.900	0.931
Objective Career Success (OCS)	5	3.442	0.997	0.945
Subjective Career Success (SCS)	5	3.335	0.891	0.928
Teamwork and Leadership (TWL)	5	3.496	0.901	0.917
Practice Based Curriculum (PBC)	9	3.547	0.836	0.945
Inquiry Based Curriculum (IBC)	10	3.401	0.945	0.956
Internship (IN)	7	3.409	0.969	0.944
Career Guidance and Development (CGD)	12	3.366	0.886	0.956

Table 2: Factor Loadings

Variables	No. of Items	Factor Loadings
Career Development (CD)	3	0.819, 0.837, 0.781
Work Exploration (WE)	5	0.821, 0.704, 0.954, 0.887, 0.865
Self-Knowledge (SK)	5	0.951, 0.922, 0.944, 0.914, 0.913
Career Reflection (CR)	5	0.932, 0.889, 0.935, 0.853, 0.904
Adjustment and Control (AC)	4	0.772, 0.815, 0.848, 0.757
Flexibility (FL)	4	0.877, 0.826, 0.713, 0.756
Learn Ability (LA)	4	0.944, 0.951, 0.929, 0.935
Reflective Behavior (RB)	4	0.939, 0.922, 0.950, 0.884
Career Pro-action (CP)	6	0.920, 0.906, 0.919, 0.876, 0.856, 0.827

Variables	**No. of Items**	**Factor Loadings**
Communication and Networking (CN)	8	0.815, 0.839, 0.833, 0.794, 0.797, 0.790, 0.771, 0.708
Objective Career Success (OCS)	5	0.889, 0.906, 0.847, 0.880, 0.883
Subjective Career Success (SCS)	5	0.873, 0.880, 0.833, 0.851, 0.808
Teamwork and Leadership (TWL)	5	0.871, 0.850, 0.780, 0.806, 0.845
Practice Based Curriculum (PBC)	9	0.872, 0.878, 0.852, 0.824, 0.815, 0.791, 0.768, 0.753, 0.737
Inquiry Based Curriculum (IBC)	10	0.879, 0.866, 0.859, 0.839, 0.858, 0.815, 0.788, 0.772, 0.769, 0.775
Internship (IN)	7	0.930, 0.872, 0.778, 0.826, 0.820, 0.774, 0.797
Career Guidance and Development (CGD)	12	0.818, 0.840, 0.822, 0.818, 0.809, 0.834, 0.809, 0.782, 0.737, 0.774, 0.783, 0.767

After univariate analysis and reliability analysis, CFA analysis was performed to assess study used constructs' validity by following guidelines provided by Hair (2009). Consequently, this study measured convergent validity and discriminant validity by adapting the procedure proposed by Fornell & Larcker (1981) wherein to assess convergent validity, each variable's factor loadings should be greater than 0.7, composite reliability (CR) should be greater than 0.8 and average variance extract (AVE) should be greater than 0.5. In addition to it, to assess discriminant validity, each variable's square root of AVE should be greater than the correlations of all the variables. But aforementioned convergent validity and discriminant validity assessment criteria is only acceptable if measurement model fit indices meet threshold criteria suggested by Hair, Black, Babin, Anderson, & Tatham (2006), Kenny (2011) and Kline (2015).

Table 3: Psychometric Properties-I

	CR	AVE	LAZ	CGDZ	IBCZ	PBCZ	CNZ	INZ	CPZ	OCSZ	WEZ	SKZ	TWLZ	CRZ	SCSZ	RBZ	FLZ
LAZ	0.968	0.884	**0.940**														
CGDZ	0.955	0.640	0.456	**0.800**													
IBCZ	0.954	0.677	0.248	0.266	**0.823**												
PBCZ	0.945	0.659	0.328	0.313	0.274	**0.812**											
CNZ	0.932	0.631	0.376	0.270	0.321	0.176	**0.794**										
INZ	0.939	0.689	0.221	0.227	0.370	0.305	0.254	**0.830**									
CPZ	0.956	0.783	0.682	0.428	0.245	0.282	0.378	0.219	**0.885**								
OCSZ	0.946	0.777	0.443	0.480	0.315	0.320	0.377	0.152	0.395	**0.882**							
WEZ	0.929	0.725	0.404	0.393	0.259	0.294	0.271	0.187	0.425	0.299	**0.851**						
SKZ	0.969	0.863	0.514	0.439	0.285	0.384	0.341	0.195	0.515	0.324	0.692	**0.929**					
TWLZ	0.918	0.691	0.290	0.301	0.334	0.387	0.302	0.219	0.333	0.299	0.325	0.363	**0.831**				
CRZ	0.957	0.816	0.413	0.426	0.222	0.387	0.220	0.130	0.444	0.301	0.691	0.606	0.249	**0.903**			
SCSZ	0.928	0.721	0.405	0.517	0.361	0.371	0.386	0.217	0.381	0.604	0.323	0.411	0.380	0.420	**0.849**		
RBZ	0.959	0.855	0.699	0.439	0.230	0.355	0.348	0.151	0.586	0.389	0.338	0.496	0.289	0.418	0.425	**0.925**	
FLZ	0.873	0.633	0.605	0.372	0.281	0.367	0.339	0.236	0.560	0.348	0.341	0.518	0.291	0.400	0.409	0.679	**0.796**

Table 4: Psychometric Properties-II

	CR	AVE	CGDZ	IBCZ	PBCZ	CNZ	INZ	OCSZ	TWLZ	SCSZ	CDZ	ACZ
CGDZ	0.955	0.640	**0.800**									
IBCZ	0.954	0.677	0.266	**0.823**								
PBCZ	0.945	0.658	0.313	0.274	**0.811**							
CNZ	0.932	0.631	0.270	0.321	0.176	**0.794**						
INZ	0.939	0.689	0.227	0.370	0.305	0.254	**0.830**					
OCSZ	0.946	0.777	0.480	0.315	0.320	0.377	0.152	**0.881**				
TWLZ	0.918	0.691	0.302	0.334	0.387	0.302	0.219	0.299	**0.831**			
SCSZ	0.928	0.721	0.517	0.361	0.371	0.386	0.217	0.604	0.380	**0.849**		
CDZ	0.854	0.660	0.515	0.317	0.435	0.348	0.214	0.379	0.391	0.471	**0.813**	
ACZ	0.876	0.638	0.534	0.307	0.412	0.449	0.253	0.497	0.371	0.503	0.671	**0.799**

Most widely used model fit indices are: Normed Chi-square (Chi Square (CMIN)/Degree of Freedom (DF)) whose threshold value is 3. Root Mean-square Residual (RMR) whose threshold value is 0.9. Tucker-Lewis coefficient (TLI) whose threshold value is 0.9. Comparative Fit Index (CFI) whose threshold value is 0.90. And Root Mean Square Error of Approximation (RMSEA) whose threshold value is 0.5. Normally for good model fit, in the case of Normed Chi-square, RMR and RMSEA of study measured values should be less than from threshold values. Conversely, in the case of GFI, AGFI, TLI and CFI of study measured values should be greater than from threshold values. Measurement model fit indices of this study are: Chi-square=263.881, DF=177, Normed Chi-square=1.491, RMR=0.045, TLI=0.935, CFI=0.938, RMSEA=0.038 wherein all chosen model fit indices are meeting the threshold model fit criteria. It means now this study can proceed to assess construct validity. In favor of convergent validity, this study completely fulfilled convergent validity

assessment criteria. Same in the case of discriminant validity. Summarized results of construct validity are shown in Table 3 and Table 4 named Factor Loadings and Psychometric Properties respectively. In Table 4, diagonal bold values are representing square root of AVE of respective construct. Above all discussed measurement model results are representing first order CFA results. Because this study assumed during first order CFA constructs that all constructs are measure on global scale and there is no scale which is measured on facet scale. According to Bryman & Bell (2011) if constructs of any scale are measured through direct indicators that scale will be called global scale but if constructs of any scale are measured through different dimensions and then dimensions are measured through different indicators that scale will be called facet scale. As discussed earlier, in this study CD and AC are facet scale. CD dimensions are WE, SK, CR. and AC dimensions are CP, RB, LA and FL. In order to assess construct validity with these facet scales 2nd order CFA was performed. Similar to first order measurement model, model fit indices of 2nd order measurement model were meeting the model fitting threshold criteria. 2nd order measurement model fit indices are: Chi-square=6123.807, DF=4213.00, Normed Chi-square=1.454, RMR=0.045, TLI = 0.934, CFI=0.937, RMSEA=0.038. Correspondingly, in favor of 2nd order construct validity, 2nd order CFA completely fulfilled convergent validity and discriminant validity assessment criteria. Summarized 2nd order construct validity results are shown in Table 2 and Table 4 named Factor Loadings and Psychometric Properties-II respectively. Before applying SEM technique, this study applied common method biasness (CMB) test. It is believed that if all the data will be collected from same source of information through instrument, there are chances of common method biasness in the data, which may lead to false model testing outputs (Harman, 1976; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In order to test CMB in the data, Harman (1976) single factor approach was applied, wherein model fit indices of single factor analysis should be worse than multifactor analysis model's fit indices if there is no biasness in the data. Harmoniously after applying CMB test, this study received highly worse single factor model fit indices which are: Chi-square=22173.534, DF=4265, p=.000, Normed Chi-square=5.199, RMR=0.149, TLI=0.392, CFI=0.407, RMSEA=0.115, which were highly contradicting with first order CFA and 2nd order CFA model fit indices, discussed above. It means there is no common method biasness in the current study collected data. After confirming first order factors structure and second order factors structures and testing common method biasness,

this study further proceeded to apply SEM. To run SEM, firstly structural model was converted into this study proposed model in accordance with proposed hypotheses then model fit indices and regression weights were computed. As in CFA, SEM model fit indices were also meeting model fit threshold criteria, which are: Chi-square=6244.408, DF = 4220.00, Normed Chi-square= 1.480, RMR=0.079, TLI = 0.931, CFI = 0.933, RMSEA = 0.039. After it this study checked proposed casual relationships with support of SEM output which are discussed below one by one.

As it was postulated in H_1 that learning environment – practice base curriculum, inquiry base curriculum, internship and career guidance & dialogue – has impact on career success – objective career success and subjective career success. In favor of H1 results reveal that PBC, IBC, CGD has positive significant impact on OCS except IN which has negative significant impact on OCS. Correspondingly PBC, IBC, CGD have positive significant impact on SCS except IN which have negative insignificant impact on SCS. In general results are supporting this study postulated H_1.

In order to test H_2 which was proposed that Career competency – career development, career adjustment & control, teamwork & leadership and communication & network – mediate the relationship between learning earning environment – practice base curriculum, inquiry base curriculum, internship and career guidance & dialogue – and career success – objective career success and subjective career success. In favor of H_2, direct effect of PBC, IBC, CGD have showed positive significant effect on CD, OCS, SCS except IN which has shown insignificant effect on CD, OCS, SCS. Additionally CD showed positive significant effect on SCS but insignificant effect on OCS. Moreover indirect effects PBC, IBC and CGD showed positive significant effect on SCS through CD, rest indirect effects PBC, IBC, IN, CGD on OCS through CD and indirect effect of IN on SCS through CD were insignificant. The direct effect of IBC, CGD have showed positive significant effect on CN, OCS, SCS, while PBC have showed positive significant effect on OCS, SCS but not on CN. Furthermore, IN which has shown insignificant effect on OCS, SCS but significant effect on CN. Additionally CN showed positive significant effect on OCS and SCS. Moreover, IBC, IN and CGD showed positive significant indirect effect on SCS through CN, rest indirect effects of PBCon OCS and SCS through CN were insignificant. The direct effect of PBC, IBC, CGD have showed positive significant effect on TWL, OCS,

SCS except IN which has shown insignificant effect on TWL, OCS, SCS. Additionally TWL showed positive significant effect on SCS but insignificant effect on OCS. Moreover indirect effects PBC, IBC and CGD showed positive significant effect on SCS through TWL, indirect effect of CGD on OCS through TWL was also significant. Besides, rest indirect effects PBC, IBC, IN on OCS through TWL and indirect effect of IN on SCS through TWL were insignificant. The direct effect of IBC, CGD have showed positive significant effect on AC, OCS, SCS, while PBC have showed positive significant effect on AC and SCS but not on OCS. Furthermore, IN which has shown insignificant effect on AC OCS and SCS. Additionally AC showed positive significant effect on OCS and SCS. Moreover, PBC, IBC and CGD have showed positive significant indirect effect on OCS and SCS through AC, contrarily, indirect effects of IN on OCS and SCS through AC were insignificant.

5) CONCLUSION

The research was an attempt to explore whether the career competencies are playing mediating role in between Institutional Leaning Environment and Career Success of the TEVT sector workforce or not. If yes, where are the gaps and how to abridge those gaps? In order to develop the understanding, already developed questionnaire was used for the survey form TVET graduates (diploma or certificate holders) who were employed in different industrial establishments and self-employed. Previous studies claim that people in the beginning (20-35 years) and middle level (35-50 years) of career, as a rule, strive to achieve specific life goals and meet certain requirements, finding charming place in the company and then in society by developing a certain way of life and to build meaningful relationships with people linked to this age group. For reaching such levels in their career and life they need multiple career competencies as the career are now more complex (Michael Bernard Arthur, Inkson, & Pringle, 1999) and workplace skills are necessary (Barker & Satcher, 2000). Based on the study results the model which comprise of the provision of such institutional learning environment that helps in career competencies development which assist the TVET graduates to become skilled workforce and achieve career success. The proposed model examines the mediating role of career competencies in between institutional learning environment and career success. As per results, the study suggests the following conclusion. Firstly, career success is abstemiously influenced by learning environment through

career competencies. Thus the results of this study support the previous work of different researchers (Kuijpers & Scheerens, 2006b; M. Kuijpers, Meijers, & Gundy, 2011; Marinka Kuijpers & Meijers, 2012; Lertwannawit, Serirat, & Pholpantin, 2011b; Wang, 2013). The study exhibit that the competencies related to career development dimensions contribute to subjective success but fails to leads to objective success. The fact is that TVET sector in Pakistan did not develop such learning environment that gives career reflection to the learners. Students even getting the diplomas and were unfamiliar with the work they have to done in the industry. They don't know what they actually want to achieve in their life. What are their strengths and weakness? What they actually like or not? What are their career goals? How to achieve certain goals? What are job opportunities and future threats? TVET system lacks in the development of such skills. The second competency "career adjustment and control" results are somehow same as of past studies that it plays its role in the development of objective and subjective career success. The dimensions of career adjustment and control i.e. flexibility, learnability, reflective behavior and career pro-action; the competencies have positive impact on career success either it is objective or subjective. As the results of this study past studies (Lertwannawit et al., 2011b), teamwork and leadership skill not mediated on objective success but somehow on subjective success. According to the results of this study and prior studies (Wang et al., 2011), communication and networking are influential factors of career success, but should also be considered abilities. The reason of such results is that trainees were not satisfied with the theoretical knowledge provided by the TVET institutes. This also means that curriculum needs to be revised in collaboration with the employers so that the quality of skills to be provided to the trainees which help them to develop career competencies in them. One of the reasons behind is that the students are unaware of their needs of career development and what they actually want form their career. Because in Pakistan no vocational guidance mechanism has been established and if somewhere exists is without planning (Bilal & Malik, 2014). It reflects that Curricula being taught at TVET institutes had not been formulated keeping in view of working place and demand of industry. As it is supply oriented other than demand oriented. If it becomes practice based and inquiry based it would be very helpful for the trainees. Currently the trainings are theoretically enough, but they were lacking on inquiry and practical side. The graduates had to improve various aspects of their skills, attitudes and communication skills to adjust and to be successful in their present job.

The existing curricula is lacking in competing the emerging demand of labor. It need to be up-graded and revised with the help of employers so that skills level of trainees could meet the labor market demand. The internships should be work oriented developed with the intention to enhance job related skills and understanding of job requirement for the better future employment. The institutions have to increase industrial visits of their teachers and students so that they can enhance their understanding with actual work environment. Mostly students are unfamiliar with what they have to do in the practical life. The quality of the teachers should assess regularly, labs should be equipped with latest technologies and regular lectures of industrialists should be arranged at institutes so that teachers and students can understand the requirement of workplace. The HR recruiters of the industries also indicated that skilled workforce of TVET institutes also lacking in various aspects. The trainees were not properly trained in terms of skills, commitment, communication skills and personal grooming. The acquired skills of the trainees were outdated and they have train them to improve the quality of their products. In most of industries, there training officer, who identify the lacking of hired HR and suggest the training programs for them.

There is a lack that maintains the strong liaison with the TVET stakeholders. There is no Intermediary Agency that could a bridge the gap between the institutes and the industry. The institutes will be able to enhance the quality of the skills in the light of feedback of industry. Its establishment will enhance the industry-institution linkage which is vital for demand driven workforce. The industry is prepared to share their information and feedback to introduce the new technology that is being used in the global market. The employers also suggested that intermediary agency should be public body and based on public-private partnership. Career Guidance and Dialogue lack in TVET instructions that would be the strength of TVET as it is actually based on it. Vocational education without vocational guidance and dialogue is useless. If a person is getting vocational education and he did not know what he wants to be and where my track or education brings me, it leads towards compete disaster. TVET sector of Pakistan have no mechanism of career counselling or vocational counselling. Due to weak liaison with industry, no proper placement efforts are being made at institute level. There are no designated career counsellors at institute who would guide the trainees about future goals, life preferences, required skills and competencies, motivation, job opportunities and concerned industry

information. The analysis indicates that trainees are not being counseled during the delivery of course which is essential for the successful careers of any students. No formal career counselor is appointed at institute who would help the students to opt better career.

There is shortage of quality skilled manpower in the country for which the industry has provide extra money to the existing employees which affect the quality of their product. If TVET provide demand driven skilled workforce it would be very helpful for the industry which is striving hard to produce sophisticated manufacturing but fails due to the lack of skilled workforce up to international level. The trainees are not properly counseled and guided at the time of admission and during the delivery of course. It has been observed that socio-political factors are not playing their due roles rather other forces are dominant because society shapes the character and attitudes of its members. Therefore, lots of efforts are also required from political, religious and environmental forces to generate industrious interest among youth to divert their attention towards modern trends of technology. Entrepreneurial skills are lacking in the TVET graduates as no efforts have been made for the development of skills which are essential for entrepreneurs as most of the graduates want to get a job and fewer and fewer individuals have entrepreneurial intentions.

5.1) Study implications

The study has several implications for the policy makers at different levels. The feedback of trainees working in different organizations reveals that most of them were not provided proper career counselling and guidance from their institutes. They get the job through their personal references and there was no support from their institutes. It is suggested that a career counselor/placement officer should be designated in each institute, he should arrange counseling sessions at the time of admission, during the delivery of course and at the completion of diploma/ certificate. He/she should also maintain the data of students and relevant employers. He/she should also arrange session of soft skills, job fairs, seminars, career days and industrial visits of students and teachers in collaboration with the industry. For the better production of skilled workforce, liaison with the industry and other TVET stakeholders need also to be increased. It is also highlighted that institutions' management should take various steps for the improvement skills in their trainees i.e.

develop practice based and inquiry based curricula, industry need based learning material, assessment of teaching standards, fully equipped labs with latest instruments, frequent industrial professionals' lectures; this lead to better understanding of industry/workplace demands among teachers and students. Though academic institutes are main source of talented human-resource supply, there are no formal efforts from neither industry nor TVET side to strengthen the academia-industrial collaboration. No serious efforts are being taken from either side to bridge the gap between the two. There is no formal instructions and support from government to provide On Job Training (OJT) or internship opportunities to the graduates. Industry should cooperate with the TVET institutes for the betterment of technical skills in the graduates and ultimately a better career path; the study suggests that there should be a third body that could bring them closer and could serve as platform to share the demands of each other. The Government its self should actively play the role of monitoring body that will ensure the formulation and effective implementation of policies for the improvement of entire system in the light of feedback received from Intermediary agency. The government needs to ensure the plenty of funds for the upgradation of labs and training centers. Foreign qualified trainers' trainings and overseas training culture should also be promoted. The government should also scan emerging needs of job market and ensure provision of modern technology/tools required in training institution as per demand of local as well foreign industry. The study observed high scarcity of career counselors in academia and no efforts are being taken for the development in this regard. Based on these study findings, it is suggested that introducing large scale reforms in the TVET sector learning environment coupled with the individuals' career competencies will lead to greater improvement in the process model of providing TVET skill workforce. It will assist the researchers of this domain to understand the role of learning environment and career competencies for career success.

5.2) Study limitations and future research directions

This study focuses on determinants of career success of graduates of, specifically, TVET sector. The study only targeted the graduates of Punjab province. There is a need to replicate the study for other provinces of Pakistan. Such a research should also be replicated for other educational sectors i.e. general education, engineering, business education, medical studies etc. Moreover, a comparative study for public verse private

educational sector may reveal deeper findings. Such types of studies need also to be replicated in other countries having similar economic situations like Pakistan. Moreover, the proposed model can be extended in various dimensions. The variable, Institution instructors/teachers' training, should be introduced as the element of institutional learning environment. The role of career counselor should also be considered, that is expected to support in selecting an individual's competency based career path. This will ultimately lead to a successful professional career. The role of career competencies should be tested along with the individual's personality traits. The study presents a mixed perspective of employees and entrepreneurs; the analysis of solely entrepreneurs' perspective may present a relatively bigger picture for the system improvement.

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APPENDIX

Table 5: Direct Effects

Relationships	Unstandardized β	Standardized β	P
PBC → CD	0.267	0.273	***
IBC → CD	0.117	0.140	*
IN → CD	-0.011	-0.013	ns
CGD → CD	0.358	0.392	***
PBC → OCS	0.148	0.135	*
IBC → OCS	0.165	0.175	*
IN → OCS	-0.054	-0.058	ns
CGD → OCS	0.366	0.357	***
PBC → SCS	0.146	0.142	*
IBC → SCS	0.161	0.182	***
IN → SCS	-0.009	-0.011	ns
CGD → SCS	0.326	0.340	***
CD → OCS	0.119	0.106	ns
CD → SCS	0.193	0.184	*

Note: ns=not significant, *=p<0.05, ***=p<0.001.

Table 6: Indirect Effects

Relationships	Unstandardized β	Standardized β	P	BCCI	
				Lower	Upper
PBC → CD → OCS	0.032	0.029	ns	0.003	0.081
IBC → CD → OCS	0.014	0.015	ns	0.000	0.049
IN → CD → OCS	-0.001	-0.001	ns	0.019	0.007
CGD → CD → OCS	0.043	0.042	ns	0.004	0.106
PBC → CD → SCS	0.052	0.050	*	0.016	0.104
IBC → CD → SCS	0.023	0.026	*	0.005	0.055
IN → CD → SCS	-0.002	-0.002	ns	-0.022	0.013
CGD → CD → SCS	0.069	0.072	*	0.023	0.135

Note: ns=not significant, *=p<0.05.

Table 7: Direct Effects

Relationships	Unstandardized β	Standardized β	P
PBC → CN	0.024	0.022	ns
IBC → CN	0.208	0.222	**
IN → CN	0.116	0.125	†
CGD → CN	0.178	0.175	**
PBC → OCS	0.176	0.160	*
IBC → OCS	0.129	0.137	*
IN → OCS	-0.084	-0.089	ns
CGD → OCS	0.366	0.357	***
PBC → SCS	0.193	0.188	***
IBC → SCS	0.140	0.158	*
IN → SCS	-0.036	-0.041	ns
CGD → SCS	0.358	0.373	***
CN → OCS	0.238	0.236	***
CN → SCS	0.206	0.218	***

Note: ns=not significant, †=p<0.1, *=p<0.05, **=p<0.01, ***=p<0.001.

Table 8: Indirect Effects

Relationships	Unstandardized β	Standardized β	P	****	BCCI	
					Lower	Upper
PBC → CN → OCS	0.006	0.005	0.687	Ns	-0.019	0.038
IBC → CN → OCS	0.049	0.052	0.003	**	0.022	0.094
IN → CN → OCS	0.028	0.030	0.060	†	0.003	0.066
CGD → CN→ OCS	0.042	0.041	0.003	**	0.017	0.079
PBC → CN → SCS	0.005	0.005	0.689	Ns	-0.016	0.033
IBC → CN → SCS	0.043	0.048	0.002	**	0.020	0.080
IN → CN → SCS	0.024	0.027	0.056	†	0.004	0.057
CGD → CN → SCS	0.037	0.038	0.002	**	0.014	0.074

Note: ns=not significant, †=p<0.1, **=p<0.01.

Table 09: Direct Effects

Relationships	Unstandardized β	Standardized β	P
PBC → TWL	0.283	0.275	***
IBC → TWL	0.186	0.209	***
IN → TWL	0.019	0.022	ns
CGD → TWL	0.149	0.155	*
PBC → OCS	0.153	0.140	†
IBC → OCS	0.162	0.171	*
IN → OCS	-0.058	-0.062	*
CGD → OCS	0.396	0.386	***
PBC → SCS	0.154	0.150	*
IBC → SCS	0.155	0.175	**
IN → SCS	-0.015	-0.017	ns
CGD → SCS	0.374	0.389	***
TWL → OCS	0.096	0.090	ns
TWL → SCS	0.153	0.153	**

Note: ns=not significant, †=p<0.1, *=p<0.05, **=p<0.01, ***=p<0.001.

Table 10: Indirect Effects

Relationships	Unstandardized β	Standardized β	P	BCCI	
				Lower	Upper
PBC → TWL → OCS	0.027	0.025	Ns	-0.001	0.062
IBC → TWL → OCS	0.018	0.019	Ns	0000	0.053
IN → TWL → OCS	0.002	0.002	Ns	-0.007	0.020
CGD → TWL→ OCS	0.014	0.014	†	0.001	0.039
PBC → TWL → SCS	0.043	0.042	***	0.016	0.086
IBC → TWL → SCS	0.028	0.032	***	0.012	0.067
IN → TWL → SCS	0.003	0.003	Ns	-0.014	0.023
CGD → TWL → SCS	0.023	0.024	**	0.006	0.052

Note: ns=not significant, †=p<0.1, *=p<0.05, **=p<0.01, ***=p<0.001.

Table 11: Direct Effects

Relationships	Unstandardized β	Standardized β	P
PBC → AC	0.222	0.237	***
IBC → AC	0.093	0.115	†
IN → AC	0.033	0.042	ns
CGD → AC	0.367	0.419	***
PBC → OCS	0.103	0.094	ns
IBC → OCS	0.147	0.156	*
IN → OCS	-0.067	-0.071	ns
CGD → OCS	0.280	0.273	**
PBC → SCS	0.135	0.131	*
IBC → SCS	0.157	0.178	**
IN → SCS	-0.020	-0.023	ns
CGD → SCS	0.292	0.304	**
AC → OCS	0.347	0.297	**
AC → SCS	0.279	0.254	**

Note: ns=not significant, †=p<0.1, *=p<0.05, **=p<0.01, ***=p<0.001.

Table 12: Indirect Effects

Relationships	Unstandardized β	Standardized β	P	BCCI	
				Lower	Upper
PBC → AC → OCS	0.077	0.070	**	0.036	0.136
IBC → AC → OCS	0.032	0.034	*	0.007	0.080
IN → AC → OCS	0.012	0.012	ns	-0.170	0.044
CGD → AC → OCS	0.127	0.124	**	0.051	0.209
PBC → AC → SCS	0.062	0.060	***	0.280	0.112
IBC → AC → SCS	0.026	0.029	*	0.005	0.065
IN → AC → SCS	0.009	0.011	ns	-0.130	0.036
CGD → AC → SCS	0.102	0.106	**	0.051	0.172

Note: ns=not significant, *=p<0.05, **=p<0.01, ***=p<0.001.