



## **Skills and Employability of Graduates: The Role of Skills Development Programs in District Swat**

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### **ABSTRACT**

This study examined the impact of skills on the graduate's employability, with the potential moderating role of employability skills development program activities. Primary data collected through a self-administered questionnaire from randomly selected 580 graduates (those graduates who have completed their graduation during 2017 - 2022) of district Swat, Khyber Pakhtunkhwa, Pakistan was used for the empirical analysis. Descriptive statistics, unpaired t-test analysis, and OLS regression analysis confirmed the hypothesis that skills have a significant positive impact on the graduate's employability on employed, unemployed and combined group of graduates. The results also confirmed the potential moderating role of employability skills development program activities in the process. The specific employability components like personal qualities, core skills, initiative & enterprise, and attitude & work ethics are also found significantly related to the graduate's employability. The findings of the study suggest that higher education institutions should properly plan for employability skills development program activities during graduation and ensure the participation of the students in such activities. The study also suggests that proper mechanisms should be implemented in higher education institutions to trace the skill development of the graduates during their graduation. Finally, it is suggested that the post-graduation employability skills development programs should be market-oriented and based on employer's requirements.



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## **1. Introduction**

The definition of employability is given as, the ability of a person to compete in the labour market, secure employment, and make his/her career in it by utilizing his/her skills and abilities (Harvey, 2001). Due to the rising questions like, why do some graduates have higher employability as compared to others? Why do some graduates find jobs easily while others wait for it for a longer period of time? Why do some graduates find employment, which matches their study area while others have jobs, which do not match their area of interest? The topic of determinants of employability has become an area of interest for researchers and educationists.

On such grounds, the present study focuses on the issue of how the employability skills of graduates (which they derive from formal and informal education) are linked with the graduate`s employability, how this relationship is moderated by involvement of graduates in the employability skills development program (ESDP) activities and how these skills contribute to the success of graduates in the labour market.

On the other hand, employability skills consist of a large number of skill components ranging from individual personal characteristics to academic and technical knowledge, which is acquired from education, and training. Hager (2002) states that employability skills consist of skills like attitude, temperament and abilities, demanded by employers in today`s changing world of work. These skills provide the edge to those individuals who have them, to those individuals who lack them, and thus they are demanded by employers. Therefore, individuals, particularly graduates who have such skills, get employment easily as compared to those graduates who lack these skills. According to (Chan, 2000) these skills of graduates automatically generate their demand and they are easily absorbed in different organizations. Finch, Hamilton, Baldwin, and Zehner (2013) provides the evidence that the skill components like core skills, personality traits, and attitude of graduates are positively related to the employability of graduates.

There is also evidence for moderating role of ESDP activities in employability skills and graduate`s employability relationship. The graduates can improve their skills by their engagement in ESDP activities both during their graduation and after graduation. During graduation, ESDP activities include a broad range of activities, like participation in sports, participation in different societies and clubs, watching inspirational speakers online and participation in noncredit courses (Pool & Sewell, 2007). Cleary, Flynn, and Thomasson (2006) also described the activities that may help in work-based learning, like field trips and career counseling sessions as part of the during graduation ESDP activities. Post-graduation ESDP activities include different practical training programs launched by public or private institutions for enhancing the employability of younger graduates.

There are many factors which determine the employability of graduates. These factors range from personal and family characteristics to the institution`s environment and work ethics (Forrier & Sels, 2003). In personal factors, the risk taking ability, working independently, goal accomplishment ability, self-esteem and self-efficacy are included (Hansemark, 2003). These traits explain the phenomena that why some people react to same situation in different manners (Llewellyn & Wilson, 2003). Self-esteem of an individual significantly predicts employability and it is associated with higher levels of employability skills (Potgieter, 2012).

The employability outcome is a result of a wide range of features working together. Starting from the family background and social characteristics, an individual passes through school, colleges and universities, which add different knowledge and experience to the individual's personality. The ability of an individual to be employable or not also depends on the characteristics and experience of the graduates that they gain from family, society and educational institutes (Jones & Spicer, 2005). Family and social characteristics include parent`s education, parent`s occupation, social status and ethnicity, while educational characteristics include type of institution, ownership of institution, and fields of study etc. There are also some factors, which work as moderating factors in the process. These factors include engagement of individuals in extracurricular activities, ESDP activities, and work experience (Karamesini, 2008).

This study is aimed at tracing out the impact of skills, specifically employability skills, on the employability of graduates. Moreover, it also tries to find out the moderating role of individual engagement in ESDP activities. In ESDP (during graduation), all those extracurricular activities are included, which are conducted during the studies, like participating in the sports clubs, watching online inspirational speakers, and participation in societies or clubs etc. Similarly, the impact of post-graduation ESDP activities launched by the government in order to enhance the employability skills of youth will also be traced in the study. The study seems fruitful for many

reasons. As in Pakistan, there is huge unemployment among graduates. According to the report of Pakistan Institute of Development Economics (PIDE) the graduate unemployment rate has reached 16.5% (Razzaque, 2020) and is increasing day by day. The reason behind such a growing trend is the low employability skills of the graduates. Hence, there is a greater need to improve the skills of graduates to fulfill the needs of the employer, and hence it will obviously result in decreases in the level of unemployment. In the process, the moderating role of different ESDP activities will also be pursued, which will help us in the formulation of market-based training programs and their duration. Additionally, this study has contributed to existing literature in the form of a relationship between the particular components of employability skills and the employability of a graduate, which is more simplified. Similarly, Nazir and Yasir (2016) concluded their study with the remark that there is need for government intervention in order to provide opportunities for enhancing the employability of (transgender) a specific group of society. Therefore, the present study will also help the government to formulate proper training programs for specific groups as well as for the overall labor force.

These theoretical background provide a foundation to the issue that how the graduate`s employability is determined by skills, and how the graduate engagement in ESDP activities (both during and after the graduation) has moderating role in the determination of such relationship.

## **2. Literature Review**

Employability can be defined as the combination of academic and technical understanding, personal characteristics, and various kinds of other skills and attitudes learned at different institutions, including social institutions (Knight & Yorke, 2004). As employability is considered important for getting employment and fulfilling the needs of the employer, therefore a greater number of researchers have traced employability and its determinants. Finch et al. (2013) argued that employability skills show a significant role in the determination of individual`s employability. Other factors which affect the employability of the graduates are core skills: academic and technical knowledge (Gray, 2010) personality traits: fixed belief of an individual which are unchangeable and incremental, process skills: the ability to use existing inputs like machine, colleagues and own potential, Wellman (2010), and initiative and enterprise (the ability of an individual to initiate new things and work). As the employer`s recruits graduate to enhance the organizational performance, a study by Costin (2002) shows that the skills of a graduate positively affect the organizational performance. According to Johnson and Burden (2003) graduates who are able to display their soft skills during the recruitment process are easily recruited and they greatly contribute to the performance of the organization. The study findings thus conclude on the fact that these skills are very important and positively predict the employability of graduates.

Moreover, it is also given by the literature that employability skills development programs are also designed to improve the employability and working skills of graduates. Rahman et al. (2012) revealed that these programs are helpful in improving the work competencies and enhancing the practical abilities of graduates. Recently, higher education institutes all around the world have initiated skill development programs to increase the efficiency of their graduates to meet the requirements of the employers (Shukran, Wok, Majid, & Noor, 2004). Among these activities, the involvement of skill attributes in the curriculum (Knight & Yorke, 2004), opportunities for career guidance (Bridgstock, 2009) and opportunities of practical work are included. There are also some studies like Callanan and Benzing (2004) which found that post-graduation training programs are also helpful in the determination of employability of the graduates. In post-graduation employability skills development programs, the practical training, internships, and use of different tools and techniques are included (Shukran et al., 2004). All these activities are helpful in improving the working skills of graduates. All these studies provide evidence that employability skills development programs (during graduation as well as post-graduation) are very influential in the determination of employability of the graduates. In the

present study, along with the total skills of graduates, we will also specifically trace the impact of specific components of employability skills on employability for the first time, and will also trace the moderating role of during graduation and post-graduation employability skill development program activities on the employability and employability skills relationship.

### 3. Research Methods

This study is based on primary data collected through questionnaires. The population of the study is all the graduates in district Swat who have graduated during 2017-2022. According to the report of the Federal Bureau of Statistics (PBS, 2017) on average 24,490 students complete graduation annually in Swat district, so on average 146,940 students graduated in the given period, which is our required population. Based on Yamane's formula of sample selection, the required sample size is calculated by the formula:

$$n = \frac{N}{1+N(e^2)} \quad (1)$$

An online questionnaire was generated and shared with randomly selected graduates from all the regions of Swat district. A total of 585 submissions were made to the questionnaires. As the questionnaire was designed so that the answer to each question was made mandatory, hence the questionnaires were submitted with complete answers. The idea was that the graduates who completed their graduation in 2017 is expected to be employed in some occupation or further studies (Kong, 2011).

The graduates who completed their graduation before 2017 are then excluded from the data sets. There were only 3 graduates. Similarly, the graduate with more than 34 years of age is also excluded from the study, which was 2 graduates, because it is expected that before graduation they may be engaged in some occupations which may cause biases in the results. After making these changes, finally we have a data set of 580 graduates in which 249 (43%) are employed and 331 (57%) are unemployed.

### 3.1 Variables Definitions and Measures

As ready to use scales for the measurement of our variables (dependent and independent) is not available, therefore we have to rely on self-made constructs that have validity in the literature. These self-made constructs are more suitable for the study, because our main variables are qualitative in nature and, according to Spector (1994), these variables can be measured by self-made constructs more accurately.

#### 3.1.1 Employability of Graduates

To develop a reliable measure for employability, following (Rothwell & Arnold, 2007) the study relied on two measures of employability, such as internal and external employability. Moreover, the items that have been utilized in earlier studies for operationalizing employability are used (Juhdi, Pa'Wan, Othman, & Moksini, 2010). The employability scale is developed by including different constructs that are related to skills for seeking a job, behavior of a graduate and his/her skills, which are the main requisites of performance (Van der Heijden, 2002), rapid responding ability to a change in working conditions (Rajan, Van Eupen, & Jaspers, 1997), and communication skills (Fugate, Kinicki, & Ashforth, 2004). A Likert scale is developed for measuring such characteristics with a value 5 for strongly agree to 1 strongly disagree. Finally, the items for both external and internal employability are added together and divided by the scale items in order to get a total employability variable. The Cronbach alpha is then calculated to check the validity of the scale, which is 0.97, significantly greater than the recommended level given by Cronbach and Thorndike (1971).

### **3.1.2 Employability Skills**

For making the construct for measuring the employability skills of graduates, the personal skills of the graduates are divided into five components: Personal traits, processing skills, core skills, initiative ability and attitude. Different items were added for the measurement of each individual component of employability skills. Potgieter (2012) also used such items for the measurement of such constructs. The respondents were asked to respond to each of the items on a five point-like scale ranging from 5 strongly agree to 1 strongly disagree. Finally, to check the reliability of the items, included, a Cronbach's alpha was calculated as 0.98, which is significantly higher than the desired level of 0.70.

### **3.1.3 Engagement of Graduate in ESDP**

The study considers ESDP activities in two aspects, during the graduation ESDP activities and post-graduation ESDP activities. During graduation, ESDP activities include different curricular and co-curricular activities, like participation in noncredit courses outside the university, participation in sports, participation in different societies, and participation in social activities etc, which go parallel to the usual academic activities. For the assessment of graduate engagement in these activities a measure is taken from London and Smither (1999). Following Knight and Yorke (2004) 13 items were included (after some modification) in the questionnaire related to the ESDP. A five point Likert scale is developed showing the involvement of the graduate in such activities, with 1 "for not at all" to 5 for very often. Cronbach's alpha calculated for the variable was estimated as 0.94, higher than the recommended level given by Cronbach and Thorndike (1971).

## **3.2 Validity of Data and Construct**

In the study, most of the constructs used were self-reported, therefore rising concerns about the validity of the estimate. Several steps were taken to ensure the validity of the data and estimates. Principal component analysis is used as recommended by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) for checking the common method bias in the construct. By using PCA, all the items with Eigen values exceeds one are retained for the dependent variable as well as independent variables. For the employability variable, two components with Eigen values 0.03 and 0.05 were dropped from the analysis. All other components were found significant; therefore, they are retained in the analysis.

In the first step, the mean is calculated and by following Frazier, Tix, and Barron (2004) all the independent as well as moderate variables are standardized. For the purpose of comparing the study variables, a t-test analysis and descriptive statistics was also carried out. In the result section, descriptive statistics will be presented first, and then the t-test results will be discussed. After that, the OLS regression results will be discussed which is carried out to find the impact of different independent variables on the dependent variable.

## **3.3 Education Production Function**

In our study we will go with the Contemporaneous Educational Production Model recommended by Houtenville and Conway (2008). Following the existing literature from the educational production function, the employability of the graduates depends upon the combination of different present and past educational and other characteristics of the graduates. The process of employability development can be stated in general form as:

$$EMP_i = F(EMPS_i) \tag{2}$$

Where  $EMP_i$  is the employability of a person "i" measured through a scale variable made from different characteristics.  $EMPS_i$  is the matrix of total employability skills of graduate "i" Following Ding and Lehrer (2007) the above model can also be written in the linear equation form as:

$$EMP_i = \beta_0 + \beta_1 TEMPS_i + \beta_2 PGESD_i + \beta_3 interaction\ term\ I_i + \beta_4 DGESD + \beta_5 interaction\ term\ II_i + \epsilon_i \quad (3)$$

Where TEMPS is the total employability skills of graduate "i" PGESD is the post-graduation employability skills development programs, interaction term I is the interaction term between TEMPS and PGESD, DGESD is during graduation employability skills development program, and interaction term II is the interaction term for during graduation ESDP and TEMPS. We will also estimate the model for individual employability skill components as:

$$EMP_i = \beta_0 + \gamma_1 CORES_i + \gamma_2 PERSQ + \gamma_3 PSKIL_i + \gamma_4 ATTID_i + \gamma_5 INAEN_i + \beta_2 + \beta_2 PGESD_i + \beta_3 interaction\ term\ I_i + \beta_4 DGESD + \beta_5 interaction\ term\ II_i + \epsilon_i \quad (4)$$

The additional variables here are CORES, which represent core skills of the graduate "i", PERSQ shows personal qualities, PSKIL show process skills, INAEN show initiative and enterprise and finally, ATTID represent attitude of younger graduates.

#### 4. Results and Discussions

##### 4.1 Descriptive Results

Table-1 presents the descriptive results of the study. From the study, 77% respondents consist of male graduates while 23% of graduates consist of female graduates. The percentage data matches with the Federal bureau of Statistics (PBS, 2017) data, which revealed that a total of 24,490 students graduated in the year 2017 in the district swat, among which 19232 (78%)-

**Table 1**  
**Characteristics of Respondents (n=580)**

Demographic variable	Frequency	Percentage (%)
Gender	Male	77
	Female	23
Age	18-34	99
	35-44	1
	45-54	0
	55 and above	0
	Only BS (Hon`s)/Masters	89
Qualification	BS (Hon`s)/Masters with MS/MPhil	10
	BS (Hon`s)/Masters with MS/MPhil Ph.D.	0.17
	2022	32
Graduation Year	2021	31
	2020	17
	2019	13
	2018	6
	2017	0.6
	Before 2017	2
Type of Institution	Public	72
	Private	28
Age of Institution	New	49
	Old	51
Employment Status	Employed	43
	Unemployed	57

Source: Own calculations from Survey data

-are male graduates while 5257(21%) are female graduates. Similarly, the survey data revealed that 32% of the graduates completed their graduation in the year 2022, 31% in the

year 2021, 17% in 2020 and 13% in the year 2019 representing the participation of different age groups. Among the study respondents, 416 (71%) of the graduates completed their graduation from public universities/colleges while 164 (28%) of the respondents completed their graduation from private universities/colleges.

The standard deviation, mean and correlations of the variables are given in Table 2. The mean of the employability variable is 3.38 with a standard deviation of 0.913, which shows that on average the graduates have moderate employability. In their study (Barnard & Nel, 2009) found that graduates having 4.2 or above employability are considered very good, graduates having employability below 4.2 and above 3.4 are considered good. Similarly, for graduates having employability greater than 2.5 and below 3.4, they are considered to have poor employability, and finally, graduates having an employability level less than 2.5 are considered alarming and need urgent solutions to enhance it.

#### 4.2 T-test Results

Before conducting OLS regression analysis, t-test analysis is conducted in order to study the employability and employability skills subject to the status of graduates as employed and unemployed, with respect to the sex as, male and female graduates and finally, with respect to the ownership of, institution as public and private university/ college`s graduates.

**Table 2**  
**Correlations, Means and Standard Deviations**

N= 580	Mean	S D	1	2	3	4	5	6	VIF
<b>Dependent variable</b>									
EMPL0	3.387	0.913	1.000						
<b>Independent variables</b>									
TEMPS	17.566	4.599	0.587***						1.26
			0.000	1.000					
DESDP	3.017	0.967	0.255***	0.450***					1.29
			0.000	0.000	1.000				
PESDP	0.417	0.494	0.0201	0.0118	0.141***				1.03
			0.629	0.000	0.000	1.000			
Interaction terms									
Interaction term-II	54.988	25.573	0.467***	0.789***	0.869***	0.094**			7.03
			0.000	0.000	0.000	0.0232	1.000		
Interaction term-I	7.303	9.230	0.141***	0.238***	0.236***	0.935***	0.287***		7.59
			0.000	0.000	0.000	0.0000	0.000	1.000	

Where \*\*\*P < 0.01, \*\*P < 0.05, \*P < 0.10

The results given in Table 3 show that employed graduates have comparatively higher mean values for employability as well as employability skills as compared to unemployed graduates. These results provide early evidence for the hypothesis, which presumed that the employability skill of employed graduates is found higher as compared to unemployed graduates.

Summarizing the results of the t-test analysis, it is given in the upper part of Table 3 that employed graduates are found to have higher employability skills as compared to unemployed graduates, providing early evidence in favor of the study hypothesis. Similarly, the t-test results provide mixed evidence regarding the comparison of male and female graduates. Moreover, regarding during graduation ESDP and post-graduation ESDP, public institute graduates are found to have higher value in both, as compared to private institute graduates, represented by the lower part of Table 3, with female graduates having higher mean value for employability and employability skills, and males having higher mean values for during graduation ESDPs and post-graduation ESDPs. These results are very valid, because it is found that there are very much fewer opportunities for ESDP activities for female graduates in the study area.

**Table 3**  
**T-Test Results**

<b>A: Employment status</b>			
	<b>Employed</b>	<b>Unemployed</b>	<b>Difference</b>
Employability	3.4563	3.3364	0.119**
Total ES	18.0872	17.1743	0.912***
DESDP	3.1183	2.8811	0.237***
PESDP	0.4441	0.3815	0.062***
<b>B: Graduate`s sex</b>			
	<b>Male</b>	<b>Female</b>	<b>Difference</b>
Employability	3.364622	3.468615	-0.1039
Total ES	17.43652	18.01538	-0.578*
DESDP	3.080556	2.794872	0.285***
PESDP	0.442222	0.330769	0.111**
<b>C: Institution`s ownership</b>			
	<b>Public</b>	<b>Private</b>	<b>Difference</b>
Employability	3.404519	3.345854	0.058
Total ES	17.38277	18.03171	-0.648*
DESDP	3.022035	3.002541	0.019
PESDP	0.423076	0.402439	0.020

Source: authors own calculations based on survey data.

Where Total ES is total Employability skills, PESDP is post-graduation employability skills development programs, DESDP is during the graduation employability skills development programs.

### 4.3 Regression Results

After descriptive stats and t-test analysis, OLS analysis is also undertaken to test the hypothesis of the study. Three models are estimated, each has three separate categories for employed, unemployed and combined group of graduates. In the first model (Model-1), employability skills, during graduation ESDPs and post-graduation ESDP (along with two interaction terms, one for the moderating role of during graduation ESDPs and one for the moderating role of post-graduation ESDPs are tested on the dependent variable. In the second model (Model-2), the interaction term for post-graduation ESDP activities is dropped due to an insignificant P value, while all other variables are retained. In the third model (Model-3) employability is tested on the individual components of the employability skills (personal traits, core skills, processing skills, attitude and initiative ability) post-graduation ESDPs, during graduation ESDPs and interaction term for the moderating role of during graduation ESDP activities.

#### 4.3.1 Employability and Employability Skills Relationship

From the results given in Table 4, the employability skills are significantly related to the employability of graduates (in model 1a:  $\beta = 0.167$  with ( $P < 0.05$ ), while in model 1b:  $\beta = 0.114$  with ( $P < 0.05$ ) and model 1c:  $\beta = 0.083$  with  $P < 0.01$ ). These results are in line with the descriptive results and t-test results already obtained, clearly reflecting the greater role of employability skills in the determination of employability of younger graduates.

The results further indicate that ESDP activities (during graduation) play moderating role in the determination of employability and employability skills relationship (*Model 1a*,  $\beta = 0.051$ ,  $P < 0.05$ ), (*Model 1b*,  $\beta = 0.060$ ,  $P < 0.05$ ) and (*Model 1c*,  $\beta = 0.144$ ,  $P < 0.05$ ). These results provide support to the hypothesis, which states that participation in ESDP activities has a significant impact on the employability of graduates and ESDP activities have a positive moderating role in employability skills and employability relationships. As the interaction term for the post-graduation ESDP activities concerned, it is found insignificant in the determination of the employability of graduates and therefore it was dropped from the second model.



In model 3, employability is tested on the individual components of skills like core skills, personal qualities etc. and employability skills development programs (both during graduation and post-graduation) and, interaction term for during graduation employability skills development programs and total employability skills. Table: 4 presents the results of model: 3 for employed, unemployed and combined group of graduates. The results of the model are also in line with the earlier results, providing that the core skills of graduates consisting of the academic and technical knowledge gained over time is found significantly related to the employability of graduates for all the three groups of graduates. (*Model 3a*,  $\beta = 0.301$ ,  $P < 0.01$ ), (*Model 3b*,  $\beta = 0.320$ ,  $P < 0.01$ ) and (*Model 3c*,  $\beta = 0.304$ ,  $P < 0.01$ ). These results reflect the importance of the core skills in the determination of employability skills of the graduates. Similarly, personal qualities of graduates are also found significant for all the three models.

**Table 4**  
**OLS Results**

<b>Model: 1</b>			
	<b>Model 1a</b>	<b>Model 1b</b>	<b>Model 1c</b>
Constant	1.574 (0.001)	0.194 (0.021)	1.035 (0.010)
TEMPS	0.167 (0.036)	0.114 (0.022)	0.083 (0.004)
PESDP	0.283 (0.085) I.S	0.597 (0.008)	0.120 (0.681) I.S
Interaction term-I	0.007 (0.346) I.S	0.0136 (0.204) I.S	0.008 (0.152) I.S
DESDP	0.804 (0.034)	1.329 (0.006)	0.384 (0.004)
Interaction term-II	0.051 (0.016)	0.0607 (0.018)	0.144 (0.033)
Observations	246	334	580
R-Square	0.3272	0.4065	0.3640
<b>Model: 2</b>			
	<b>Model 2a</b>	<b>Model 2b</b>	<b>Model 2c</b>
Constant	1.911 (0.000)	0.778 (0.047)	0.790 (0.008)
TEMPS	0.145 (0.008)	0.066 (0.042)	0.096 (0.000)
PESDP	0.164 (0.117) I.S	0.359 (0.004)	0.402 (0.002)
DESDP	0.848 (0.024)	1.151 (0.013)	0.139 (0.040)
Interaction term-II	0.053 (0.012)	0.051 (0.038)	0.009 (0.015)
Observations	246	334	580
R-Square	0.3110	0.4148	0.3636
<b>Model:3</b>			
	<b>Model 3a</b>	<b>Model 3b</b>	<b>Model 3c</b>
Constant	1.881 (0.000)	0.655 (0.008)	1.404 (0.000)
CORES	0.301 (0.000)	0.320 (0.000)	0.304 (0.000)
PQUAL	0.011 (0.003)	0.120 (0.048)	0.030 (0.016)
PSKIL	0.018 (0.692) I.S	0.076 (0.153) I.S	0.024 (0.478) I.S
INAEN	0.028 (0.757) I.S	0.108 (0.252) I.S	0.043 (0.513) I.S
ATAWO	0.079 (0.309) I.S	0.161 (0.044)	0.009 (0.862) I.S
PESDP	0.181 (0.307) I.S	0.528 (0.000)	0.312 (0.000)
DESDP	0.894 (0.016)	1.285 (0.005)	0.155 (0.016)
Interaction term-II	0.155 (0.009)	0.059 (0.014)	0.015(0.019)
Observations	246	334	580
R-Square	0.3659	0.4375	0.3974

Where TEMPS is total Employability skills, PESDP is post-graduation employability skills development programs, interaction term-I is the interaction term of total employability skills and post-graduation ESDP activities, DESDP is during the graduation employability skills development programs interaction term-II is the interaction term of total employability skills and during graduation ESDP activities, CORES is the core skills of graduates, PQUAL is the personal qualities of graduates, PSKIL is personal skills, INAEN is initiative and enterprise and ATAWO is attitude and work ethics of the graduate.

### 4.3.2 Impact of ESDP Activities on Employability

The study results, given in model 1, show that during graduation, ESDP activities are significantly and positively affecting the employability of graduates for all the three models (*Model 1a*,  $\beta = 0.804$ ,  $P < 0.05$ ), (*Model 1b*,  $\beta = 1.329$ ,  $P < 0.01$ ), and (*Model 1c*,  $\beta = 0.384$ ,  $P < 0.01$ ).

Similarly, the interaction term for graduation ESDP activities is also found significant for all the three groups, indicating that there is a positive moderating impact of ESDP activities during graduation on the employability and employability skills relationships (*Model 1a*,  $\beta = 0.051, P < 0.05$ ), (*Model 1b*,  $\beta = 0.060, P < 0.05$ ) and (*Model 1c*,  $\beta = 0.144, P < 0.05$ ). Post-graduation ESDP activities are found significant for employed graduates only, while the interaction term for post-graduation ESDP activities is found insignificant for all the three groups, hence being dropped from the model.

## 4.4 Discussion

There is a greater gap between the output of higher education institutes (Graduates) and the requirements of the labor market, reflected by the growing trend of graduate unemployment (Karadisi, 2012). Besides this greater gap, studies on the identification of causes of such gap that is related to the background of graduates, their skills attributes and their engagement in different activities are very limited (Stuart, Lido, Morgan, Solomon, & May, 2011), particularly in Pakistan. This paper is an attempt to address this gap by studying how the employability skills of graduates is related to their employability, and how ESDP activities play a moderating role in the process.

### 4.4.1 Skills and Employability of Graduates

The results of the analysis reveal that the skills of graduates are significantly related to the employability of graduates, confirming the study hypothesis, which postulates that employability and employability skills are positively related. The results also provide strong evidence that the skills of the employed graduates is higher as compared to the unemployed graduates. These results are also in line with descriptive results, which show that the mean values of TEMPS for employed graduates are higher as compared to the mean values of unemployed graduates. Similarly, the t-test results also showed a significant difference between the skill and attributes of the employed and unemployed graduates. The results also give support to the assumption that employed graduates are found more evolved in employability skills development program activities as compared to unemployed graduates. A study by Finch et al. (2013) reached the same conclusion regarding the skills and employability relationship. Further, the present study updates the existing literature by testing the individual components of employability skills over employability. Pool and Sewell (2007) has also conducted a similar study but they didn't test the individual components of employability skills over employability.

### 4.4.2 The Moderating Role of Employability Skills Development Program Activities

The literature also provide the evidence that employability skills development program activities has moderating role in the determination of employability and employability skills relationship, therefore, in the study the moderating impact of ESDP is also traced between the employability and employability skills. Pool and Sewell (2007) found in their study the involvement of an individual in ESDP activities is strongly related with employability and employment success of the graduates. In linking with the moderating impact of employability skills development programs activities, the results indicate that there is positive moderating impact of during graduation ESDP activities on the employability and employability skills relationship. On the other hand, moderating impact for post-graduation ESDP activities is found insignificant. These results indicate that individual participation in ESDP activities during the graduation benefit them in enhancing their employability. Studies by Stuart et al. (2011) found the same results, that participation in ESDP activities enhances the employability of the graduates.

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## **5. Conclusion and Policy Recommendations**

In today`s world of work, employers need skills from their workers, particularly from graduates, for the smooth running of their organizations. Costin (2002) is of the view that these skills are required by the graduate for his/her individual success in his/her career, and by employers for determining the performance of their firms. The paper is an attempt to test the impact of employability skills on the graduate`s employability with the moderating role of employability skills development programs (both during graduation and post-graduation). By connecting the theory with the employability models developed in the literature with the data of employed and unemployed graduates from district swat, KP, Pakistan, we conducted multivariate analysis. The results provide evidence in favor of a significant positive impact of employability skills as a whole as well as the individual component of employability skills on a graduate`s employability. The findings also provide evidence of a moderating role of a graduate`s engagement in ESDP activities during graduation. On the other hand, the moderating impact of post-graduation ESDP activities on the employability and skills relationship is found insignificant.

The results confirmed that employability skills have an important role in the determination of the graduate`s employability and engagement in employability skills development programs moderates this relationship. It is also found in the study that, on average, the employed graduates are found more engaged in employability skills development programs as compared to the unemployed graduates, and they are found to have higher employability values as compared to their other counterparts. Branine (2008) reveal similar results for the UK, he argues that irrespective of the institution attended by the graduate, the employers target only the employability skills of the graduates. Moreover, the study did not establish the moderating role of post-graduation ESDP activities in the employability and employability skills relationship, hence demanding more research on the issue.

The main conclusion of the study is that the higher education institutes must include a proper plan for the inclusion of ESDP activities along with their academic activities during the graduation and ensure the participation of students in such activities for the enhancement of their employability and employability skills. Similarly, graduates must also ensure their participation in ESDP activities to enhance their employability, employability skills and meet the needs of the employers.

Determining such relations between the employability and employability skills development programs for the individual as well as institutions, contributes to the existing understanding of employability and it demands detailed study regarding the determination of the number and frequency of such activities. Finally, the study result explains how the individual components of employability skills are linked with employability, paving the way for their enhancement and meeting the requirements of the present day employer.

### Authors Contribution

Muhammad Ilyas: literature search, data collection, data analysis, data interpretation, drafting  
 Sher Ali: study design and concept, critical revision, incorporation of intellectual content

### Conflict of Interests/Disclosures

The authors declared no potential conflicts of interest w.r.t the research, authorship and/or publication of this article.

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