

Bridging the Gap Between Higher Education and Employment: An Empirical Study of Graduate Employability Challenges and Industry Readiness in Pakistan

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Abstract

The present research is aimed at researching the main reasons of graduate unemployment and underemployment in Pakistan with the background of the objective of the SDG 8 dedicated to decent work as a goal of the sustainable development. It uses a quantitative method to study the direct effect of three key variables on graduate employability, which are educational quality, development of skills, and collaboration with the industry. The sample size used to collect data was 159 final-year students, fresh graduates, and alumni of higher learning institutions in Karachi using a structured questionnaire. Through the structural equation modeling (PLS-SEM), it was established that all three factors affect employability in a statistically significant positive way. The results indicate that there is the best impact of industry collaboration, skills development and then education quality. These variables alone cover 70.5 percent in the variance in graduate employability. This highlights the supremacy of real-world, industry relevant experience and well-developed skill-building programs. It is concluded that graduate unemployment can be mitigated only through a joint reform in higher education among the institutions, policy makers and employers. Some of the main recommendations are the alignment of the curriculums to the market requirements, incorporation of the soft skills in the curriculum, and promotion of practical learning by way of the internships. These are necessary to ensure sustainable economic growth and employment equity in Pakistan and the paper forms an excellent, data-based model in the future policy and scholarly interventions.

Keywords: Graduate Employability, Education Quality, Skills Development, Industry Collaboration, Sustainable Development Goal 8, Pakistan

1. Introduction

The rate of unemployment among university graduates is increasing in Pakistan because an increasing number of individuals complete their higher education and do not get regular jobs (Harvey, 2005; Jackson, 2016). Strong industry-academic relationships and well-designed career development programs enhance graduates' employment prospects in many developed countries (Mason, Williams, & Cranmer, 2009; Harvey, 2005).

However, a lack of exposure to professional environments and practical experience often leaves Pakistani recent graduates ill-prepared for the workforce (Tomlinson, 2012; Jackson, 2016). Often, employers note a difference between college training and the requirements they face for

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workers. Shutting such gaps is important for fair development and safe economies (Harvey, 2005). Analyzing these issues allows the study to highlight the problems faced by new graduates in employment and suggest practical responses.

Specific studies on Pakistan's labor market difficulties are not numerous, although efforts all over the world have looked at how skills and employment are linked (Harvey, 2005; Mason, Williams, & Cranmer, 2009).

This study signs to find answers for gaps in theory, methodology, context and practice by analyzing the main factors influencing graduate employment in Pakistan and proposes evidence-based solutions (Mason, Williams, & Cranmer, 2009; Harvey, 2005).

In the current study on graduate employability, Human Capital Theory (Becker, 1993) is regularly employed and stresses education as a factor in getting ready for a career (Ajzen, 1991). Still, the success of finding employment can depend on things like oversaturated labor markets, employers' attitudes and high importance of informal hiring methods (Tomlinson, 2012; Harvey, 2005). This research addresses the theories of industrial collaboration, skill growth and education by looking at the connection to employability in developing countries (Mason, Williams, & Cranmer, 2009; Jackson, 2016).

The bulk of studies on employment trends in Pakistan examines the whole labor force or uses qualitative observations, leaving out college graduates (Harvey, 2005; Tomlinson, 2012). Education, skills and work have mostly been examined qualitatively, not through heavy quantitative analysis (Creswell, 2014; Nunnally & Bernstein, 1994). To close the gap in previous research methods, this study provides structured survey questions for assessing university students' preparedness for work, their chances of getting a job and how well skills development programs are working.

There is not a lot of research on how the Pakistani educational system, what employers expect and social barriers support graduate employment, in spite of studies having been done on Bangladesh and India.

1.1 Scope

The purpose of this study is to offer localized perspectives on the difficulties in closing the employment gap and the connections between industry and Pakistani institutions (Harvey, 2005; Jackson, 2016). Despite continuous efforts to encourage higher education, Pakistan's job market is extremely competitive, and many recent graduates find it difficult to obtain employment in their fields of study (Harvey, 2005; Tomlinson, 2012). Employers commonly point to recent graduates' lack of technical expertise, industrial experience, and problem-solving abilities (Jackson, 2016; Andrews & Higson, 2008). This study addresses this gap by describing some of the tactics that may be adopted by academic institutions and policy makers to improve employability such as curriculum modification, internship, and partnership with industry.

Rationale of Study

The proposed study will help address these gaps and provide a comprehensive framework to enhance the job opportunity of Pakistani graduates (Mason, Williams, and Cranmer, 2009).

During the process of providing university graduates with decent jobs, that is one of the priorities of Pakistan. Although the number of individuals attending college is soaring, the number of people who are graduating still struggle to secure full-time positions that offer them stable employment and high earnings. Absence of employment opportunities and unrelatedness between the courses to the industries worsen the already existing under employed state and unemployment of fresh graduates. To bridge the disconnect between education and labor market, the proposed study aims at researching the key causes of graduate-level unemployment in Pakistan and providing policy recommendations.

1.2 Problem Statement

Although the number of people going to higher education in Pakistan has been on the rise, large percentage of higher education graduates are unemployed or under employed because of the imbalance between academic training and industry needs. Among the main problems, there is obsolete curriculum, the lack of practical skill training, and the inadequate collaboration between industry and academia. The proposed study is a research that explores the relationship between the quality of education, skills development, and the industry working together to determine the level of employability of graduates, with the view of providing workable ways to close the gap and ensure high education meets the demand of the labor market.

1.3 Research Objectives

1. To identify and investigate the primary factors contributing to unemployment and underemployment among university graduates in Pakistan.
2. To assess how effectively university curricula, align with the current labor market's skill requirements.
3. To evaluate the degree to which existing government policies and private sector activities promote employment for recent graduates.
4. To provide evidence-based educational changes and policy recommendations that would improve graduates' employability and bridge the knowledge gap between education and employment.

2. LITERATURE REVIEW

There are many graduate unemployment cases in Pakistan since foundations of learning are not the same as those found within the business sector (Harvey, 2005; Jackson, 2016).

While this study supports UN SDG 4 which calls for every person to have access to equal and inclusive education and continuous learning options, this study also supports that belief (UN, 2015).

Educational standards need to be improved, skills ought to be developed and industry should be involved to help produce graduates that are ready for work employment. Because of this, addressing graduate unemployment will be crucial for accomplishing SDG 4.

This paper reviews these characteristics in order to suggest help for both better job market fits and lower unemployment rates among new college graduates (Harvey, 2005; Jackson, 2016).

2.1 Education Quality

the workforce. Surveys reveal that a mix of outdated materials and learning based on theory makes it difficult for young people to respond to the demands of potential employers (Harvey, 2005; Jackson, 2016). The main focus in universities on memorization rather than practical training makes graduates less ready for their jobs. It has been shown that using research, up-to-date teaching and hands-on training at universities helps students get better jobs (Mason, Williams, & Cranmer, 2009).

2.2 Skills Development

Knowing how to do more tasks plays a major role in a person's career achievement. Experts from education seek those who understand technology, solve various problems and can communicate well (Tomlinson, 2012; Harvey, 2005). Studies point out that providing instruction in digital,

industry and soft skills raises the chances of finding jobs for students (Jackson, 2016). Jobs are more secure and people are better prepared for their future when they learn entrepreneurship, adapt to changes and have technology skills.

2.3 Industry Collaboration

Workers are employed well by education systems that coordinate with companies (Mason, Williams, & Cranmer, 2009). According to research, colleges involved in advisory boards, apprenticeships and internships help more students be ready for a career (Harvey, 2005). Bringing industry into the curriculum supports changes in curriculum, practical experiences for students and ongoing learning in the workplace. Fewer graduates are unemployed in countries where firms and colleges closely cooperate (Tomlinson, 2012).

2.4 Challenges in Graduate Employability in Pakistan

Many obstacles make it difficult for Pakistani graduates when choosing a profession. Aspects include a large number of people studying the same field, little practical advice on careers and not enough possible internships. Employers regularly indicate that recent graduates lack the proper technical, critical-thinking and flexible skills needed for the workplace (Jackson, 2016; Harvey, 2005). Higher education policies and how businesses take part should be changed to meet these issues (Mason, Williams, & Cranmer, 2009).

2.5 Underpinning theory

The main ideas of this study are drawn from Human Capital Theory (HCT) which says that the more educated, skilled and trained someone is, the more useful and invaluable they will be to an employer (Becker, 1993; Ajzen, 1991). He suggested in his 1964 article that the progress of individuals and communities comes greatly from educational opportunities (Becker, 1993). Campus at HCT understands that helping students gain the abilities and understanding needed for good jobs is important after graduation.

Combining Mismatch Theory, this study finds that when educational topics fall short of what employers want, it can result in unemployment (Tomlinson, 2012; Jackson, 2016). This theory believes that different supply of workers in various industries results in unemployment and underemployment.

According to Mismatch Theory, if schools make their programs match the expectations of employers, students will be better prepared for their jobs (Jackson, 2016).

Constructivist Learning Theory became the standard for helping students get needed job skills thanks to the works of Piaget and Vygotsky (Piaget, 1973; Vygotsky, 1978). According to this theory, individuals learn when they attempt to make sense out of things independently. In higher education, constructivist theory allows learners to apply valuable skills by doing projects, having internship and working in the industry (Kolb, 1984).

Experiential students in the university will have the opportunity to connect the learning with their work (Kolb, 1984).

When comparing these concepts, it becomes more apparent how industries assist and what students learn and acquire assist them to secure employment. This paper aims at identifying solutions that will enhance the fit between job training and job and resolving the issue of increasing unemployment of graduates in Pakistan.

2.6 Conceptual Framework

This paper will discuss the correlation between educational standard and graduate employability where skills development and industry partnership will serve as the mediating factors. The independent variable, quality of education, includes quality curriculum, the method of teaching and the resources available in the institution. The dependent variable, graduate employability, is the capacity of graduates to be able to secure jobs and respond to the demands of the industry.

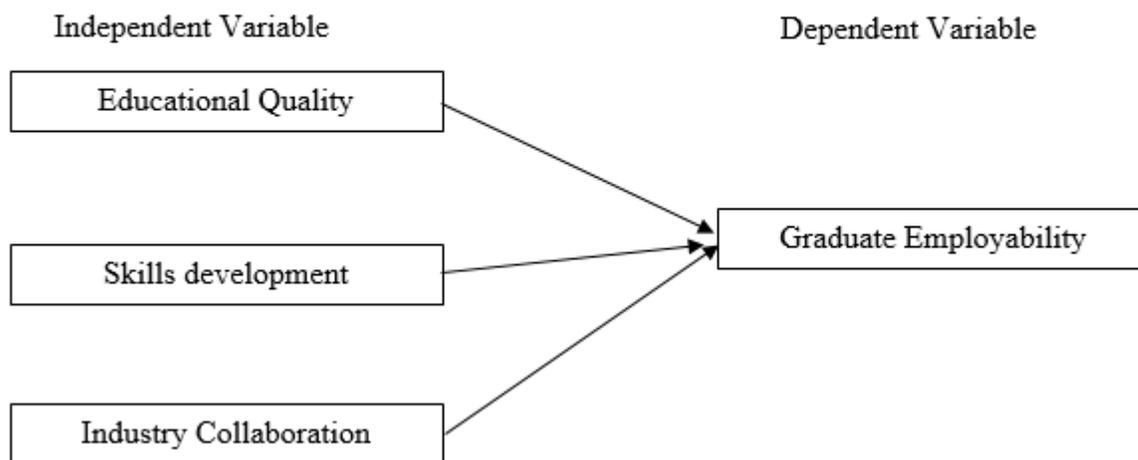
This relationship is hypothesized to occur through two important factors:

Skills Development: The quality of education boosts skills (technical, soft and cognitive) of the learners, which is directly translated in enhancing the employability of the learners.

Industry Collaboration: Collaboration between academic institutions and industries facilitates match of the college curriculum to the industry requirements, offering hands-on exposure as well as making them more employable.

This model assumes that the quality of education has a beneficial direct and indirect effect on graduate employability by developing skills and working with industries. This model emphasises the role of holistic education and involvement of the stakeholders in training the graduates to work in the workforce.

Fig 1: Conceptual Framework



3. METHODOLOGY

3.1 Research Design

Data in this study comes from a survey administered to all the participants at the same time (Creswell, 2014; Nunnally & Bernstein, 1994). Because it helps connect several elements together, this approach is useful for studying connections between industrial cooperation, training, quality of education and opportunities for employed graduates in Pakistan's workforce (Mason, Williams, & Cranmer, 2009).

Grounded in a positivist perspective, the study is designed to collect facts and numbers to learn about the obstacles recent graduates meet in their job search. The effect of academic and industrial

factors on employment outcomes can be research using a carefully-designed questionnaire (Creswell, 2014).

The main ideas informing the study come from constructivist learning theory (Piaget, 1973; Vygotsky, 1978), mismatch theory (Tomlinson, 2012) and human capital theory (Becker, 1993). Based on these conclusions, hypotheses are written and tested to see if education and schools impact graduates' readiness to work.

3.2 Population

In this study, the target population will be the university students in Pakistan who are either doing higher education or have already graduated and have a problem in finding a job.

3.3 Sample Frame

Students of different universities in Karachi were sampled (including current final year students, new graduates (not older than two years) and alumni). The amount of valid responses received was 159.

3.4 Sampling Method

The sampling method used was non-probability, which entailed selection of the participants in terms of their availability and suitability to the intended study.

3.5 Sampling Technique

There was a mixture of both judgmental (purposive) and convenience sampling. The selection of respondents was done according to their relevance in the topic of the research (e.g. all of them are students or recent graduates of a university in Karachi), but convenience sampling was done so that a respondent is easily accessible, and data could be easily compiled.

3.6 Sample Size

The sample size was eventually reduced to 159 respondents. Although a larger sample is usually desirable as it would have been more generalized, the amount was deemed adequate to the extent of the study and corresponded to the limitations of time, resources, and availability of data.

3.7 Data Collection Tools

3.7.1 Instrumentation

To examine participants' opinions, a 5-point Likert scale (from Strongly Disagree to Strongly Agree) was used for all main concepts: education quality, skills development, industry cooperation and opportunities for graduates. Each construct was evaluated using various items meant to capture what people think and believe about finding a job after school. A Google Form was used to administer the last survey. Students and recent graduates at Karachi universities saw the questionnaire, leading to the fast and complete collection of data.

3.8 Study Hypotheses

H1: Educational quality and graduate employability have a significant positivity relationship.

H2: Skills development has a significant positive impact on graduate employability.

H3: Industry collaboration positively influences graduate employability.

3.9 Data Analysis Methods

Both descriptive and inferential statistical methods were applied to the data (Creswell, 2014; Nunnally & Bernstein, 1994). The respondents' ages, genders, education, jobs and income were recorded using descriptive statistics to understand the group well.

To do inferential analysis, used two useful software applications.

- We conducted reliability tests, summarized data using descriptive statistics and used basic inferential analysis with IBM SPSS (Nunnally & Bernstein, 1994; Field, 2009).
- Using SmartPLS 4, SEM was applied to measure the connections between the main factors—education quality, skills development, industry cooperation and graduate employability.

It was analyzed in the following way:

- Checking of reliability and validity was done under Cronbach Alpha, Composite Reliability, Average Variance Extracted and factor loadings towards checking internal consistency and construct validity (Hair et al., 2017).
- Assessing the discriminant validity with the help of the Henseler et al. (2015) HTMT ratio.
- Assuming the fit of the data is good to proceed to further statistical analysis (Creswell, 2014).
- Testing the key relationships among data variables through the structural model in the test of hypothesis (Hair et al., 2017)).

All the ethical guidelines were strictly followed. Participants provided informed consent, which assured their privacy, voluntary participation in the study, and use of their data exclusively in the study (Creswell, 2014). the information was kept safely and was only used to make academic reports and analysis.

4. DATA ANALYSIS AND INTERPRETATIONS

The outer loadings of the measurement model can be used to show how strong the relationship is between each observed indicator and the latent construct it is. Most indicators in this study portrayed acceptable outer loadings, which is indicative of good construct measurement. In particular, with the construct of Education Quality (EQ), six out of seven items (EQ2 to EQ7) loaded more than the recommended loadings of 0.70, which meant that there are satisfactory levels of indicator reliability. Nonetheless, the loading of EQ1 was 0.584 which is lower than the optimal cutoff. Nevertheless, because of its statistically significant *t*-value (8.978, $p < 0.001$) and possible theoretical significance, the item could be retained, although it should not impair overall construct validity.

In the case of the Graduate Employability (GE) construct, the outer loadings of all seven indicators were high (ranging between 0.720 to 0.887) and this confirms the fact that every item is a significant contributor to the measure of the latent variable. These *t*-values and high significance levels also evidence the reliability of these indicators. Equally, indicators of "Industry Cooperation" (IC) depicted extremely high outer loadings, mostly IC3 (0.883) and IC5 (0.872), which suggests that it is strongly related to their construct. The loading was constantly at 0.70 and above which supports the internal consistency of this measure.

The Skills Development (SD) construct also had good measurement properties. The loading of all the items other than SD1 was greater than 0.80 with SD2 having a high loading of 0.853. SD1 was less loaded 0.583 indicating a lesser agreement to the underlying construct. The choice of SD1, as in the case of EQ1, must take into account its theoretical significance and effect on the general model fit. In all constructs, t-values and p-values all show that all outer loadings are statistically significant 0.001 level, and thus all indicators are significant to their respective latent variables. On the whole, the evidence of high indicator reliability and convergent validity of most of the measurement items employed in the study is presented by its outer loadings.

Table 1: Outer Loadings and Construct Reliability

Indicator	Outer Loading	T-Value	p-value
EQ 1	0.584	8.978	< 0.001
EQ 2	0.775	19.729	< 0.001
EQ 3	0.701	10.681	< 0.001
EQ 4	0.749	16.278	< 0.001
EQ 5	0.784	20.258	< 0.001
EQ 6	0.791	19.462	< 0.001
EQ 7	0.810	33.983	< 0.001
GE 1	0.720	15.986	< 0.001
GE 2	0.844	36.255	< 0.001
GE 3	0.804	19.422	< 0.001
GE 4	0.786	21.248	< 0.001
GE 5	0.887	44.359	< 0.001
GE 6	0.820	24.985	< 0.001
GE 7	0.833	26.217	< 0.001
IC 1	0.704	12.039	< 0.001
IC 2	25.676	< 0.001	0.816
IC 3	46.238	< 0.001	0.883
IC 4	18.939	< 0.001	0.831
IC 5	35.896	< 0.001	0.872

Indicator	Outer Loading	T-Value	p-value
SD 1	8.463	< 0.001	0.583
SD 2	27.784	< 0.001	0.853
SD 3	19.989	< 0.001	0.809
SD 4	31.098	< 0.001	0.848
SD 5	28.610	< 0.001	0.821
SD 6	20.000	< 0.001	0.804

Reliability analysis of the model of measurement shows that the model has high internal consistency in each of the constructs as supported by Composite Reliability (CR), Cronbachs Alpha, and Average Variance Extracted (AVE). All the constructs have Composite Reliability (also known as rho c) higher than the recommended threshold of 0.70 and this proves the high internal consistency among the measuring items. The dependent variable (DEP-VAR) presents the maximum CR of 0.932, which is a very high level of confidence in the items comprising this construct. In a similar way, the independent variables (IND-VAR, IND-VAR 2, and IND- VAR 3) all as far as their CR value is above 0.89, which indicates the reliability of the used indicators.

The Alpha values of the constructs are also supported by Cronbach. All the values are much higher than the accepted limit of 0.70, and the alpha of DEP-VAR is 0.915 and the independent variables vary between 0.866 and 0.880. These findings indicate that the measures in each construct always gauge the same concept underlining it and this supports internal reliability of the scales utilized in the study.

The Average Variance Extracted (AVE) values of all the constructs in terms of convergent validity are larger than the recommended minimum acceptable (0.50). The AVE of DEP- VAR is 0.664 and, thereby, indicates that the construct itself explains more than 66% of the variance in its indicators. The independent variables have a good convergent validity as the AVE values of the independent variables (0.556-0.678) satisfy the adequate level of convergent validity. All these findings suggest that the measurement model has both solid and valid indicators of measuring the latent constructs that were incorporated in the analysis.

Table 2. Reliability Analysis

Construct	Composite Reliability (rho_c)	Cronbach's Alpha	AVE
DEP-VAR	0.932	0.915	0.664
IND-VAR	0.897	0.866	0.556
IND-VAR 2	0.909	0.879	0.627
IND-VAR 3	0.913	0.880	0.678

A metric known as Average Variance Extracted or AVE measures the percentage of variance in the measures observed that could be explained by a construct. A value at 0.5 is acceptable when the concept accounts to over half of the variability among its measures. In the present case, the high degree of convergent validation is verified by the fact that all constructs, including that of Education Quality (EQ), Skills Development (SD), Industry Collaboration (IC), and the dependent variable, exhibit AVE values that are above the 0.70 mark (e.g., 0.815 in the case of the dependent variable and 0.746 in the case of EQ). This suggests that the intended underlying concept is reliably recorded by the items used to measure each construct.

By comparing the square root of each construct's AVE (values on the diagonal) with the correlations across constructs (off-diagonal values), the Fornell–Larcker criterion for discriminant validity is used. A construct's diagonal value (AVE) must be higher than its correlations with any other construct in the model in order for discriminant validity to be proven. This requirement is met by the table for every construct. As an instance, the dependent variable's square root of AVE is 0.815, greater than its association with EQ (0.683), SD (0.789), and IC (0.805). Similarly, even though EQ is getting close to the threshold, SD's diagonal value of 0.792 is higher than its correlations with EQ (0.743) and IC (0.825).

Despite having a comparatively high correlation (0.825), Skills Development (SD) and Industry Collaboration (IC) are still slightly below the square root of the AVE for both constructs (0.792 for SD and 0.824 for IC). This closeness points to a slightly good degree of discriminant validity. The model has sufficient discriminant validity, according to the Fornell-Larcker criterion results, and strong convergent validity across all constructs is confirmed by the AVE values. This is an implication that the hidden variables are conceptually distinct and measured.

Table 3: Fornell-Larcker Criterion

	DEP-VAR	IND-VAR	IND-VAR 2	IND-VAR 3
DEP-VAR	0.815			
IND-VAR EQ	0.683	0.746		
IND-VAR 2 SD	0.789	0.743	0.792	
IND-VAR 3 IC	0.805	0.686	0.825	0.824

The Heterotrait- Monotrait ratio (HTMT) was used to measure the discriminant validity of the constructs since it is a stricter measure of assessing the distinctiveness of latent variables. The values of all HTMTs in the model are less than the generally acceptable upper limit of 0.90 and this indicates that the constructs are empirically different among each other. The IND-VAR to DEP-VAR relationship produced a value of 0.750 with a confidence interval of 0.624 to 0.852, and this indicates there is sufficient discriminant validity and the two constructs are not overlapping.

The value of HTMT of IND-VAR 2 and DEP-VAR was 0.853, which although it has some distance to the 0.90 level, it remains within acceptable ranges. The confidence interval (0.774 to 0.919) is close to 0.90 on the upper bound, indicating that the constructs correlated strongly, but does not imply that the constructs do not have discriminant validity. Equally, the HTMT value of IND-VAR 2 to IND-VAR was 0.846 (CI: 0.741 to 0.934), which is again within the range of threshold but acceptable, especially in consideration of most scholars who propose that 0.85 to 0.90 is a relaxed standard based on the complexity of the model and theoretical assumptions.

In the case of the correlation between IND- VAR 3 and the DEP- VAR, HTMT 0.895 at the confidence interval of 0.802 to 0.971 were obtained. This is quite high although theoretically justified and sustained by other validity measures, the constructs can still be regarded as discriminant. Similarly, the HTMT value of IND-VAR 3 and IND-VAR that is 0.776 (CI: 0.651

to 0.880) fell within acceptable range, meaning that there was enough distinctiveness. The value of highest HTMT was found between IND-VAR 3 and IND-VAR 2 (0.929), with the CI (0.853 to 0.996), a bit higher than the threshold indicating the possibility of an overlap in conceptual meaning or measurement. As in these instances, cross-loadings, the content of items, and theoretical constructs should be closely looked at by the researchers to make sure that the variables make a substantive distinction. On the whole, the analyses of the HTMT proves the discriminant validity of the model and the majority of the relationships are within the acceptable range, only one pair of relationships should be subjected to a more thorough theoretical explanation or improvement.

Table 4: HTMT Matrix

Relationship	HTMT Value	2.5% CI	97.5% CI
IND-VAR <-> DEP-VAR	0.750	0.624	0.852
IND-VAR 2 <-> DEP-VAR	0.853	0.774	0.919
IND-VAR 2 <-> IND-VAR	0.846	0.741	0.934
IND-VAR 3 <-> DEP-VAR	0.895	0.802	0.971
IND-VAR 3 <-> IND-VAR	0.776	0.651	0.880
IND-VAR 3 <-> IND-VAR 2	0.929	0.853	0.996

By looking at the table’s R-squared measure, we discover that 70.5% of differences in graduate employability (DEP-VAR) are because of education quality, developing skills and industry teamwork. So, we conclude that combining these traits gives us a clear view of what drives graduate employability.

In addition, a modified R-squared value of 0.699 tells us the number of factors affecting the model. The findings reveal that the model fits as expected, even with minimal factors, as the small change in R2 when using adjusted R2 indicates.

From the table, we can see that how well graduates are educated, trained and engaged with industry is responsible for ~70.5% of differences in employability (DEP-VAR). For this reason, we may say that the three factors together give us a good picture of what affects graduate employability.

A modified R-squared value of 0.699, given the number of predictors, further confirms the conclusion. A solid match with few factors is demonstrated by the difference between the R2 and adjusted R2 being nearly the same.

The results support the claim that academic and practical factors make a difference in shaping whether a graduate can find a job.

Table 5: R-square value

	R Squared	R Squared Adjusted
DEP-VAR	0.705	0.699

Table 6. Cross Loading

Indicator	IND-VAR	IND-VAR 2	IND-VAR 3	DEP-VAR
EQ 1	0.584*	-	-	-
EQ 2	0.775*	-	-	-
EQ 3	0.701*	-	-	-
EQ 4	0.749*	-	-	-
EQ 5	0.784*	-	-	-
EQ 6	0.791*	-	-	-
EQ 7	0.810*	-	-	-
GE 1	-	-	-	0.720*
GE 2	-	-	-	0.844*
GE 3	-	-	-	0.804*
GE 4	-	-	-	0.786*
GE 5	-	-	-	0.887*
GE 6	-	-	-	0.820*
GE 7	-	-	-	0.833*
IC 1	-	-	0.704*	-
IC 2	-	-	0.816*	-
IC 3	-	-	0.883*	-
IC 4	-	-	0.831*	-
IC 5	-	-	0.872*	-
SD 1	-	0.583*	-	-
SD 2	-	0.853*	-	-
SD 3	-	0.809*	-	-
SD 4	-	0.848*	-	-
SD 5	-	0.821*	-	-
SD 6	-	0.804*	-	-

The structural model analysis demonstrates the presence of meaningful and sensible relationships between the independent variables and dependent variable as depicted by the path coefficients, t-statistics and the p-values. The t-statistic of 0.028 and p-value of 0.142 show the path coefficient between IND-VAR and DEP-VAR is 0.142. This implies statistically significant yet substantially small positive effect, i.e., IND-VAR has a contribution to the prediction of the dependent variable, but not as much as that of the other predictors.

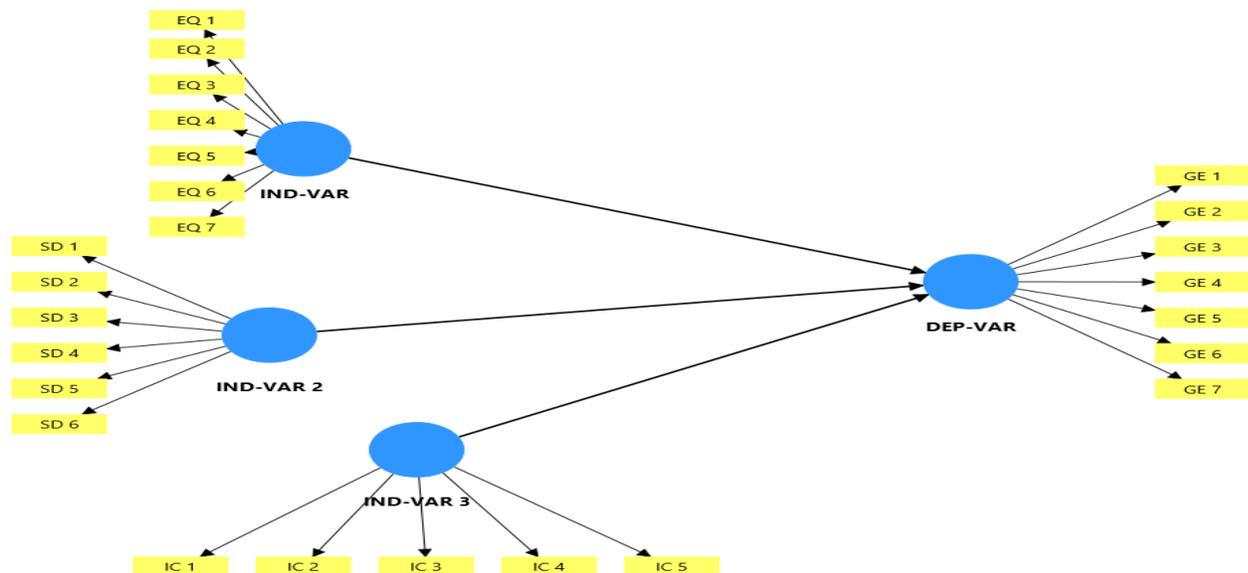
A stronger and statistically significant association with the dependent variable has been observed between IND-VAR 2, whereby path coefficient of 0.311, t-statistic of 3.027, and p-value of 0.002 were significant. The importance of these results is that it suggests that there is a medium and significant effect of IND-VAR 2 on DEP-VAR and this confirms the hypothesis and also highlights the significance of the variable in the model.

The highest relationship is found between IND-VAR 3 and DEP-VAR with a path coefficient of 0.451, t-statistic of 4.012 and a p-value of less than 0.001. This implies that there exists a strong and greatly significant positive influence meaning that IND-VAR 3 has a crucial influence in the determination of the dependent variable. The effectiveness and the importance of this direction gives strength and meaning to the role of this construct in the theoretical framework of the study. All in all, the structural model can confirm the hypothesized relationships and prove the predictive potential of the independent variables on the dependent outcome.

Table7. Path Analysis Summary

Relationship	Coefficient (O)	T-Statistics	P-Values
IND-VAR -> DEP-VAR	0.142	2.198	0.028
IND-VAR 2 -> DEP-VAR	0.311	3.027	0.002
IND-VAR 3 -> DEP-VAR	0.451	4.012	< 0.001

Fig 2. Path Diagram



5. DISCUSSIONS AND CONCLUSION

5.1 Discussion

The study looked into how partnerships with businesses, skills training and good education help graduates find jobs in Pakistan. The study demonstrates that there exist significant relationships between the combination of these variables and their impacts on careers of Pakistani graduates.

The finding we came to is that higher education plays a rather positive role in graduate employability. A t-statistic of 2.198 and a positive path coefficient ($\beta = 0.142$) showed that having more schooling clearly improves employability. The effect magnitude was considerably lesser than other variables (f^2 was only 0.030). That way, although graduates know what is expected academically, having a good education may not guarantee they can find work. Because they lack job experience, practical abilities and match the skills demanded by the job market, individuals with high academic qualifications may face challenges getting hired for full-time jobs (Pascarella & Terenzini, 2005; Van van Meijden, 2017).

The path coefficient (β) and large t-statistic indicate skills improvement had a powerful impact on graduate employability. It seems that learning specific abilities and digital skills affects employability far more than the overall quality of an education institution, according to the results. They offer evidence of the importance of including practical skills in learning at school. Offering organized programs for skill development increases the chance that graduates will fulfill the needs of the industry and easily start their professional lives (Mason, Williams, & Cranmer, 2009; Tomlinson, 2012).

One of the key findings during the research is that graduate employability has a strong and positive relationship with participating in industry partnership. The primary factor that contributed to the betterment of the employment opportunities was working on the industries that had the highest path coefficient ($b = 0.451$) and the impact size ($f^2 = 0.212$). Given that the importance of this variable is very high, providing internships, encouraging academic-industry partnerships and creating industry-related courses will significantly add to the workforce skills of students. Companies in their industry that allow students to intern or work with them provide them with realistic knowledge and good contacts that increase their likelihood of being hired. The research has revealed that working closely with other industries, in particular, is the key of narrowing the gap between education and entering the workforce (Bennett, 2016; Shuck et al., 2014).

Despite the close bond between the capabilities of a college, level of education and industry affiliation, businesses still expect colleges not to meet its expectations. Although a large majority of respondents has used status (57.9%), it is obvious that approximately 28.3% of respondents are victims of underemployment as is experienced by self-employed or part-time workers. The data on income distribution show that most working graduates have rather small incomes. According to this research (Ryan and Sackrey, 2009; Sianesi, 2010), the standard curriculums should be reformed to include workforce skills.

5.2 Conclusion

This research looked into what really affects job chances for grads in Pakistan - like ties with companies, hands-on skills, and how good colleges actually are. It turned out that working closely with industries pushes better job results more than anything else, while student abilities and classroom experiences matter a lot too. Past studies saw similar things: when schools team up with businesses, learners end up ready for work.

Even though more people in Pakistan are going to college, plenty of grads can't find solid jobs. Lots start looking for work with zero real-world practice, meaning what they learned doesn't line

up with what companies need. Because of this disconnect, many who do get hired end up making very little money - even if their degrees are just like others'. Past research backs this up - education focused on actual careers helps students land better positions.

The study shows grad job readiness can be measured using known methods focusing on industry ties, skill growth - alongside education standards. Still, it ran into issues because solid structural info was missing, blocking a closer look at how factors connect. That issue matches earlier findings stressing strong assessment tools when studying education.

Still, findings show Pakistan's college setup needs big fixes fast. Matching courses to job needs, boosting hands-on learning, or teaming up more with companies might cut down on people without work. These shifts could help learners while giving the economy a stronger base over time.

5.3 Recommendations

Here's what we found - so here's what could help boost job chances for grads in Pakistan while closing the ongoing mismatch between learning and work demands:

Strengthen Industry–Academia Collaboration

Colleges need to team up closely with companies through internships, hands-on training, or real-world tasks shaped by industries. That way, learners get to try things out in actual work settings while growing abilities bosses actually look for.

Integrate Skills Development into the Curriculum

Skill growth needs to fit into each stage of college learning. Digital know-how can grow through class tasks, hands-on work, or real-world practice. Talking clearly might come from group efforts, assignments, or teamwork exercises. Thinking things through could develop via discussions, case studies, instead of lectures. Solving issues may happen during labs, fieldwork, alongside team challenges.

Enhance Career Services and Job Placement Support

Colleges need to give solid advice on careers - like building a résumé, getting ready for interviews, or finding jobs. Instead of guessing, learners could use support from teams focused on hiring links.

Update Curricula to Reflect Labor Market Realities

Academic courses need updates now and then so they fit what jobs require these days. Bringing in experts from the field while shaping classes means students actually learn useful, current stuff.

Implement National Policies Supporting Graduate Employment

Public offices could launch efforts giving firms rewards for taking on new grads or helping young business starters. Rules that boost learning chances while connecting degree holders to country projects might lower jobless rates.

Establish Graduate Tracking and Data Collection Systems

A nationwide or university-based grad tracker helps spot job market shifts, pinpoint weak areas in training, while shaping better college courses. Ongoing polls let schools check how they're doing - then tweak what's not working

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