GRADUATES' LOW EMPLOYABILITY IN PAKISTAN: MODELLING DEMAND FOR MARKETABLE KNOWLEDGE AND SKILLS

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ABSTRACT

While graduate employability is a global problem, it is more serious in Pakistan as the quality of education and preparation of graduates by higher education institutions (HEIs) has serious shortcomings. For example, the majority of the HE graduates produced in Pakistan are not employable due to their lack of marketable knowledge and skills. This has serious implications for the Pakistani economy as it loses the potential contribution of the country's most productive workforce, undermining economic progress and social development. On the other hand, enrolment in HEIs has increased over time, and HEIs continue launching new programmes. This has created a sense of distrust among parents and potential employers, while youth seem frustrated and disillusioned due to thin prospects.

The present study addressed the challenge by investigating employer and student preferences for demand-driven and marketable knowledge and skills, surveying employers and students of business and economics programmes from selected HEIs in Islamabad. We used experimentally designed stated choice surveys and a choice modelling approach to explore the choices of respondents. The findings highlighted that employers seek advanced analytical competencies, such as problem-solving and advanced data analysis skills, among fresh graduates; value their time management, teamwork, trustworthiness, and the ability to take initiative in terms of their soft skills and professional attitude, but do not see the value of internship experience. The findings of the student survey revealed that not only do the students rate internship experience highly valuable, but they also consider a moderate to basic level of technical skills more favourably. This indicates a divergence in preferences for skills development, having implications for students as well as HEIs. The results offer concrete suggestions to improve the graduate employability and make HE more marketable to cater to the needs of the present times.

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INTRODUCTION

Training highly employable individuals is one of the key objectives of Higher Education Institutions (HEIs) all over the world, yet holding a HE qualification seems not to be enough anymore to secure a place in the workforce (Small et al., 2018). Several factors contribute to this phenomenon, including limited job opportunities, the misalignment of HEIs with market needs, and insufficient mentoring and preparation of graduates for the job market. Nevertheless, failure to provide market-oriented education and HEIs' misalignment with the needs of the job market is a major challenge (Osmani et al., 2019; Abelha et al., 2020). This also sabotages the potential of entrepreneurship, as poorly trained youth have low chances of setting up successful businesses, which can potentially create more job opportunities.

The outcomes include poor employment prospects, employers' dissatisfaction with the skills of HEIs' graduates, unmet expectations of students and their families, and poor return on educational investments. This creates a general sense of discontentment and disappointment, and a subsequent lack of trust in HEIs. In addition, artificial intelligence (AI) has created serious disruptions in the global higher education market, triggering questions about the relevance of higher education, warranting a significant transformation of the higher education sector.

The problem is more serious in low-income countries such as Pakistan. The World Bank data bank reveals that roughly six percent of males and 28 percent of females HE graduates are unemployed as of 2019 (World Bank, n.d.). However, a Pakistani study claimed that unemployment among HE graduates is 31% as of 2022, while it is as high as 51% for women (Haque & Nayab, 2022). This means that roughly one-third of the educated youth in Pakistan are unemployed. The curricula of most of the HEIs' programmes only focus on the syllabi and course content without linking them to job market needs. Furthermore, specific field training rarely provides enough room for more general and employable skill development, which are required in almost every role in the job market.

For example, effective communication and problem-solving are highly valued by employers (Rizwan et al., 2018), but graduates often struggle with these skills. HEIs in Pakistan have failed to prepare their graduates to live up to the expectations of employers, resulting in a low premium on HE and HEIs' lack of relevance to the job market. In addition, Pakistani HEIs' output indicators do not include graduate employability, which means that developing students' competencies for the job market is not reflected in the HEIs' and their faculty's performance metrics. Hence, HEIs' faculty do not have any incentives or motivation to prepare their students for the job market. On the other hand, students seek good grades instead of deeper engagement with course content to develop competencies, which impedes creative and analytical thinking, problem-solving, and effective communication (Rizwan et al., 2018). Hence, there is a dire need to revamp and upgrade the HE, including curricula, in Pakistan to meet the requirements of the job market.

Notwithstanding poor employability and low premium on HE, the enrolment in existing programmes is increasing, and so is the start of new programmes by HEIs, as indicated above. While the aspiring Pakistani middle class see HE as a pathway to social mobility, it is also a mark of social status and distinction, and those who can afford it do not want to be left behind. Hence, despite poor prospects and the atmosphere of uncertainty, parents try their best to invest in the HE of their children. As a

result, Pakistani HEIs have become parking places for unemployed youth who choose to enrol for further education, expecting that improving their qualifications will put them in a better position in the job market.

Thus, HEIs must deliver marketable education and impart demand-driven knowledge and skills for better career prospects for those who invest in it, offsetting its significant opportunity costs. Furthermore, effective and robust HE is an important driver of the social and economic progress of a nation (Gyimah-Brempong et al., 2006) and ensuring the delivery of good quality and demand-driven education is a service to society (Fahnert, 2015). As it stands, the Pakistani higher education system requires a significant overhaul to meet the expectations of its graduates, parents, employers, and overall society.

This requires creating an ecosystem of research-based modern skills and knowledge to supply trained manpower with market-oriented and demand-driven knowledge and skills that can spur growth and innovation. To achieve this, HEIs must prioritise enablement as this will not only empower graduates to transition to the professional world, but it will also empower them to become useful members of society, contributing to social development and the creation of more opportunities.

Against this background, the present research investigated HE graduate employability of business/management and economics graduates in Pakistan by exploring employer and student preferences for demand-driven and marketable knowledge and skills. The specific research questions that this study addresses are as follows.

1) What are the skills that employers look for among fresh graduates?
2) What are the skills that students seek to acquire through their HE?
3) To what extent are employer and student preferences for market-oriented knowledge aligned?
4) What are actionable suggestions for students, HEIs, and policymakers to improve the employability of HE in Pakistan?

Since it is difficult to cover all fields in one study, this analysis is confined to the business and economics programmes to enable an in-depth investigation to produce field-specific and concrete suggestions. These fields have relatively homogenous curricula across HEIs and are usually expected to have a mix of field-specific technical and more general soft skills, catering to the needs of diverse industries. The analysis is conducted using stated choice surveys with employers and students in Islamabad, Pakistan. The next section presents a brief review of the relevant literature.

LITERATURE REVIEW

There is a dearth of good empirical evidence to identify the gaps and propose suggestions for appropriate interventions to align Pakistani HE to the needs of the job market. Most of the work concentrates on identifying skills valued by employers without actually getting any quantitative measure of their importance (e.g., Abelha et al., 2020; Fahnert, 2015; Osmani et al., 2015, 2019; Small et al., 2018; Suleman, 2018). And even in the studies where importance is measured (García-Alvarez et al. 2022), they do not match these with the skills acquired by graduates in HE.

Most of the research on this topic has been conducted in developed economies, including international comparisons (Abelha et al., 2020; García-Álvarez et al., 2022; Osmani et al., 2015, 2019), but without much consideration for the development level of each economy. At the same time, most of the literature focuses on developed English-speaking countries (Fahner, 2015). Some other papers take only a conceptual or theoretical approach to employability, focusing on defining the concept, but not going into specific measurements of skills (Small et al., 2018; Suleman, 2018).

Rizwan et al. (2018) studied the fresh engineering graduates' skills in Pakistan. To measure the gap, they ask students to rate their perceived skill level and perceived relevance of a list of different skills. That same list is presented to employers, and they are asked to assign a level of importance to it. Authors find a significant gap between students' and employers' perceptions of the relevance of skills, with students favouring technical skills, while employers also highly value soft skills, such as "thinking skills" and "interpersonal skills".

This research will build further on what Rizwan et al. (2018) did by (i) capturing students' and employers' preferences through choices instead of gauging the importance; (ii) conducting the monetary valuation of marketable skills; and (iii) conducting the analysis irrespective of the field of an academic programme. This will allow us to elicit a more realistic evaluation of the marketability of HE and present the comparison and importance of competencies, which will enable planners to improve the quality of HE programs, aligning their graduates' skills with the needs of the job market.

Other studies focused on Pakistan are either specific to a particular area or do not measure preferences in a way as actionable as what the proposed study does. For example, Haque (2013) studies the schemes to improve employability in Singapore, Australia, and Malaysia and derives recommendations for Pakistan. He proposes a common employability program across universities, in which students would be enrolled after obtaining their degree. The program would have three stages, each lasting two months, and providing practical experience in (i) foundational competencies for their area, (ii) industry-specific competencies, and (iii) industry-specific skills. While an interesting proposal, it does not provide specifics on the kind of skills that should be provided in each stage, for each industry.

Warraich & Ameen (2011) look at employability needs and expectations among library managers in Pakistan, particularly at the University of Punjab, and find that while the curriculum is adequate, its implementation is lacking. In particular, they identify a lack of development of communication and presentational skills among graduates, as well as practical skills in the area. Clearly, the scope of this study is too narrow, as it only focuses on a single program. Rahman & Haleem (2018) perform a similar study for information and communication technology graduates in Khyber Pakhtunkhwa and

claim a lack of skilled workers in multiple Information technology (IT) areas. They also report that employers miss more advanced business, project management, and teamwork skills among IT graduates.

Bhatti et al. (2022) assessed the employers' appraisal of business graduates' skills and how these skills are taught at HEIs in Australia, China, Pakistan, and Saudi Arabia. They find that human resource managers in Pakistan look primarily for problem-solving, organisational, entry-level digital, goal-oriented, and decision-making skills. These skills are primarily taught through classroom discussion, simulations, conventional lectures, role-playing, and role-playing skills; and Pakistani faculty members identified conventional lectures and simulations, and computerised learning assignments as more effective. The study focuses mainly on cultural differences between countries, and not on the gap between taught skills and those skills expected in the workplace. Notably, the study did not measure the perceived relevance of skills among HEI faculty, which could have shed light on this gap.

Other studies in Pakistan take more theoretical approaches to employability. For example, Bakari & Khoso (2017) studied the influence of Psychological Capital (PsyCap) and self-perceived employability (SEP) among the business and agriculture students in Pakistan. The study relies on previous literature to justify the relevance of these two constructs on actual employability, as no measurement of their actual impact on employability is performed. Authors find no difference in the levels of PsyCap and SEP between business and agriculture students, but they report that postgraduate students have significantly higher levels of these constructs.

METHODOLOGY

This research aims to model the demand for university-level education by students, as well as university-level qualified workers. The analysis focuses on the monetary value of work (salary), training (program cost for students), and skills, which determine the demand for education and qualified labour. Furthermore, sociodemographic characteristics will also be considered to ascertain their influence on this process. This research is carried out using stated choice surveys and a choice modelling approach. To design the research, we have gathered relevant information from primary and secondary sources. The secondary sources include relevant documents and statistics, while the primary sources include consultations with key stakeholders, i.e., employers, students, and higher education experts, including academics. The consultations generated qualitative information using semi-structured interviews and focus group discussions (See the summary of the consultations in the Appendix). The consultations with key stakeholders helped us refine our research problem and research questions, and source the necessary information to create the experimental designs and develop the questionnaires. For example, this qualitative information helped in understanding the problem from the students' and employers' perspectives, and identify the main skills sought by each group. In the second stage, a choice experiment survey was developed and administered to students and employers to measure their valuation of marketable knowledge and skills. The next section details the qualitative information collection.

Qualitative Analysis: The main objective of the qualitative analysis was to better understand the determinants of demand for education and qualified labour among students and employers, respectively. More particularly, this stage helped identify the set of critical skills sought by the students in business education programs, as well as skills sought by employers from their prospective employees.

Semi-structured Interviews: Semi-structured interviews were conducted with potential employers of economics and business graduates. Key questions focused on (i) recruiting processes, including the channels used to advertise vacancies and the stages the applicants must go through; (iii) their criteria for selecting successful applicants; (iii) the skills they look for on their applicants; and (iv) their perspective on the match between the skills they look for and the skills provided by HEI. Interviews will be recorded, transcribed, and anonymised. Employers were selected through personal contacts, ensuring the representation of the public, private, and third sectors.

Focus Group Discussions: Focus group discussions were conducted with HE students to identify: (i) the process through which they decided to study a business degree; (ii) the factors influencing that decision, including family and social network influence, as well as other socio-demographic factors; (iii) the skills they look forward to develop through their degree; and (iv) their expectations in terms of salary and lifestyle once they complete their degree. We organised four focus groups with students from two public and two private universities in Islamabad Capital Territory. These include Quaid-e-Azam University, the International Islamic University, the National University of Sciences and Technology, and the National University of Modern Languages. All participants were students from economics and business programs.

c. In-depth interviews with HEI faculty

Three semi-structured interviews were conducted with senior academics. These interviews involved discussion on (i) the process through which the curriculum of the Business programs is determined; (ii) the factors influencing the curriculum; (iii) the main skills that the curriculum seeks to imbue into the students; (iv) their perspective on whether the students acquire these skills or not; and (iv) their opinion on the match between the taught skills and those needed by employers. These interviews will be analysed using a similar technique to those with employers.

3.2. Quantitative Analysis

Consultations with key stakeholders and the collection of qualitative information helped design stated choice surveys and choice modelling.

3.2.1. Choice Modelling

Choice modelling is a quantitative valuation technique, pioneered by McFadden (1974) and Louviere & Woodworth (1983), and later further developed by Train (2009), Hensher et al., (2015), and others. Since the seminal work by McFadden (1974), discrete choice models have been used in many areas, such as transport (McFadden, 1974), health (de Bekker-Grob et al. 2010), food choices (Palma et al., 2018), tourism (Crouch & Louviere, 2000), and education (Holdsworth & Nind, 2006). Discrete choice models are used both to predict individual choices and to measure and understand their valuation (also called willingness-to-pay, WTP) of attributes of alternatives.

Choice modelling has its theoretical foundation in Lancaster's theory and random utility theory. According to Lancaster's theory, the goods or services are not the objects of utility, as considered before the 1960s; instead, consumer utility is derived from their characteristics or attributes (Lancaster, 1966; Alcaly & Klevorick, 1970). Random utility theory (RUT) proposes that the utility (benefit, worth, or value) of a product is a stochastic function of its attributes. It helps us explain individual choices based on the product or service attributes and the socio-demographic characteristics of the citizens.

According to RUT, when choosing between a set of alternatives, individuals choose the alternative that provides them with the highest utility. Therefore, a systematic analysis of a series of choices allows inferring the weight or contribution of each attribute to the utility, and therefore the way it influences the choices. The weight or influence of attributes on the utility of an alternative is interpreted as preferences. However, as the utility is stochastic, i.e., it includes random, unpredictable components, it can never be predicted precisely, so a certain level of uncertainty remains. Furthermore, refinements to the framework include heterogeneity in preferences, for example, assuming that attribute weights vary as a function of socio-demographics or other respondents' characteristics.

Choice models can be estimated using both revealed and stated preferences data, with the first being choices observed in reality, and the second being hypothetical choices made using a stated choice survey in the context study. While stated preference data has the disadvantage of potentially being influenced by bias (e.g., respondents not considering some restrictions they face in reality), it also offers two big advantages. First, it is easier to collect multiple answers from each individual, lowering the cost of data collection. The second and most important benefit of stated preferences data is that

it allows the use of efficient experimental design with increased variability in the attributes, and even tests for non-existent or novel alternatives of goods and services in the market. As a result, the model has richer information on which it is to be estimated. The present research will also collect and make use of stated preferences data, as revealed preferences data are limited and not publicly available on this topic.

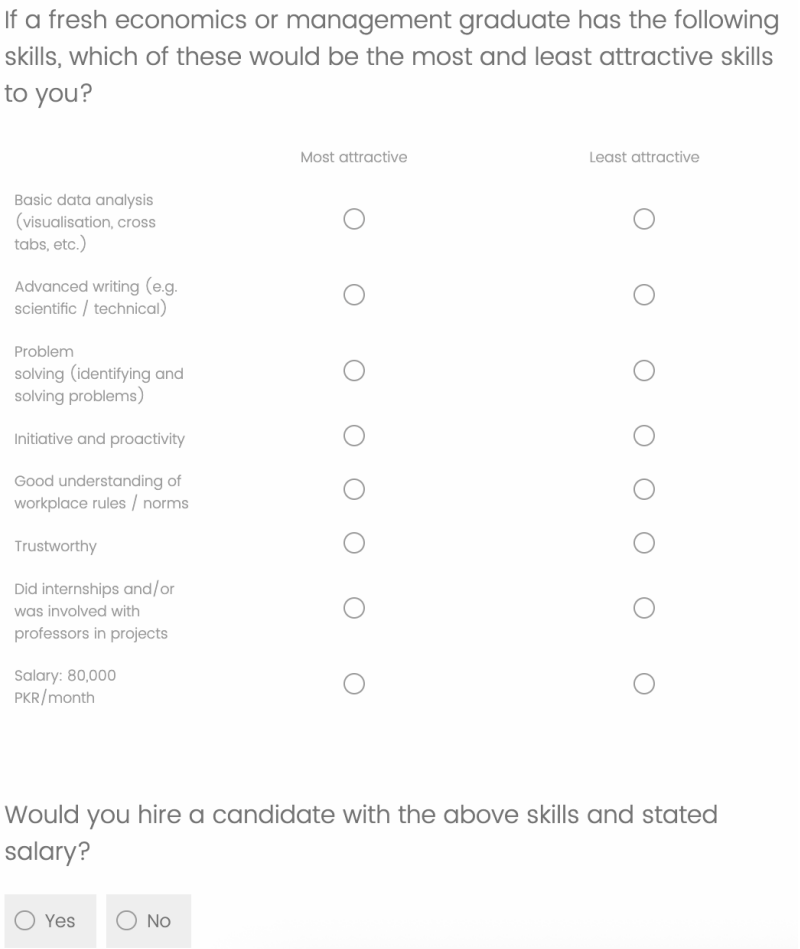
Stated choice surveys consist of a series of questions (called scenarios) where respondents are asked to choose between multiple hypothetical alternatives. The attributes of these alternatives are determined by an experimental design (Hensher et al., 2015, Rose & Bliemer, 2009) which seeks to maximise the information captured in the survey. The hypothetical nature of the alternatives allows for measuring preferences for alternatives that do not yet exist. The present research involved an experimental design to create the stated choice surveys, showing a set of competencies that are marketable skills expected by employers and students, and that HEIs are supposed to deliver. The next section presents the description of the experimental design.

3.2.2. Experimental Design

Using the literature review, secondary information, and consultations with employers and students, we refined the attribute table (Table 1), determining a list of relevant skills and their potential levels. These cover both hard skills (digital and analytic), soft skills (writing, self-admin, social skills, and attitudes), and practical experience, besides a measure of cost (the salary expectations for employers, and the semester fee for students). These attribute tables were presented to respondents using choice scenarios in an online survey. As part of the survey, each participant from the student and employer surveys faced six choice scenarios. Choice scenarios were slightly different for employers and students. Employers were asked to imagine hiring a fresh economics or business graduate, and then they were shown the profile of a hypothetical candidate. The profile was composed of one level associated with each of the skills listed in Table 1. Looking at this profile, employers had to indicate, based on their opinion: (i) what was the best feature of that candidate, (ii) what was the worst feature of that candidate, and (iii) if they would hire that candidate or not.

Figure 1 shows an example of a choice scenario. The levels of the skills changed across the choice scenarios. Students, on the other hand, were asked to imagine they had to choose a business program and were shown a series of business program descriptions based on the skills imparted in each (Table 1). For each of these programs, and based on their opinion, they had to indicate: (i) what was their best feature, (ii) what was their worst feature, and (iii) if they would enrol in the program or not.

Figure 1: Example of a Choice Scenario



Source: Captured by the authors in Qualtrics.com.

Table 1: Skills (Attributes) and Their Levels

	Employer			Student		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Digital	Proficient at MS-Office	Basic data analysis (visualisation, cross tabs, etc.)	Advanced data analysis / Coding	Proficiency at MS-Office	Basic data analysis (visualisation, cross tabs, etc.)	Advanced data analysis / Coding
Writing	Basic writing (e.g. notes, emails)	Average writing (e.g. report)	Advanced writing (e.g. scientific / technical)	Basic writing (e.g. notes, emails)	Average writing (e.g. reports)	Advanced writing (scientific / technical)
Analytic	Critical thinking (e.g. ability to question)	Problem solving (identifying and solving problems)	Creative thinking (integrates ideas from multiple sources)	Critical thinking (e.g. ability to question)	Problem solving (identifying and solving problems)	Creative thinking (integrates ideas from multiple sources)
Self-admin	Good at time management	Flexible / Good at teamwork	Initiative and proactivity	Time management	Flexibility and teamwork	Initiative and proactivity
Social	Capable of managing conflict	Good at building working relationships / networking	Good understanding of workplace rules / norms	Conflict management	Working relationships / networking	Understanding of workplace rules / norms
Attitude	Good manners & etiquettes	Persistent / Patient	Trustworthy			
Practical experience	Taught courses included field knowledge using case studies	Teaching faculty included industry professionals	Did internships and/or was involved with professors in projects	Taught courses include field knowledge using case studies	Teaching faculty include industry professionals	Chance to do internship and/or get involved with professors in projects
Salary / Fee	60,000 PKR/month	80,000 PKR/month	100,000 PKR/month	33,000 PKR/semester	50,000 PKR/semester	66,000 PKR/semester
				85,000 PKR/semester	100,000 PKR/semester	120,000 PKR/semester

Source: Authors' compilations based on Survey data.

The levels shown in each scenario are defined by an experimental design. The experimental design seeks to maximise the amount of information retrieved from each choice scenario. In particular, we used a D-efficient design, which seeks to minimise the standard error of the parameters of the model estimated with the data (Hensher et al., 2015, Rose & Bliemer, 2009). However, minimising the standard error of the coefficients as a function of the experimental design requires knowing the value of the parameters, which are unknown at the beginning of the study, as the objective of the study is to estimate those very parameters. To solve this conundrum, we performed two pilot studies.

In the first pilot study, we used an orthogonal experimental design, a less efficient kind of design, but one that does not need any prior knowledge about the parameters. With the responses from 16 employers and 47 students who participated in the first pilot study, we estimated models for each group, obtaining preliminary values for the model parameters. This allowed us to generate a D-efficient design, which we used in the second pilot study, where 15 employers and 26 students participated. With this data, we generated a second set of D-efficient designs, one for employers (D-

error = 0.4048) and another for students (D-error = 0.9894). Both final designs had 36 choice scenarios each, divided into six blocks of six choice scenarios.

3.3. Modelling

According to the theory of random utility, decision makers choose the alternative that provides them the highest benefit or utility. The utility depends on (i) the observed attributes of the alternative and characteristics of the decision-maker, (ii) the preferences of the decision-maker, and (iii) additional factors that are unobserved by the modeller. We can then mathematically represent the utility U_j of an alternative *j* as a random variable U_j (eq. 1), composed of a deterministic (V_j) and random (ε_j) part, where (i) and (ii) are captured by V_j, and (iii) by ε_j. If we know the value of V_j, and assume that ε_j follows a standard Gumbel distribution, then we can calculate the probability of choosing alternative *i* as in eq. (2). The deterministic part of the utility can be defined as a function of observable attributes $V_j = f(x_j|\beta)$, where x_j and β are vectors of attributes and preferences, respectively. The function *f* is usually assumed to be linear, hence $V_j = \sum_k \beta_k x_{jk}$. This is known as the multinomial logit model (McFadden, 1974).

$$U_j = V_j + \varepsilon_j \tag{1}$$

$$P_i = P(U_i > U_j, \forall\, j \neq i) = \frac{e^{V_i}}{\sum_j e^{V_j}} \tag{2}$$

The modelling of our data follows a similar approach to that by Balbontin et al. (2015). We assume that each level of each skill has an unobserved level of utility β_k associated to it. We then use three different multinomial logit (MNL) models to estimate these levels of utility. The first MNL is used to explain the choice of the best feature of the profile. In this model, each alternative represents the level of each of the skills. So, for example, in the choice scenario shown in figure 1, "advanced data analysis" would be one alternative, whose deterministic utility function would be defined by a single parameter $V_1 = \beta_{\text{advanced data analysis}}$, "advanced writing" would be another, with $V_2 = \beta_{\text{advanced writing}}$, and so forth. Choosing one skill over another provides information about which level has higher utility than the rest.

The second MNL model is used to explain the choice of the worst feature. It is modelled in the same way as the first one, but multiplying the utility associated to each level by a negative scale factor, e.g. -1, but the scale factor can be estimated from the data too. Multiplying by a negative scale factor implies that the alternative with the lowest utility will be chosen.

The final MNL model is used to explain the decision to hire / not hire the candidate or enrol / not enrol in the business program. In these cases, there are only two alternatives: yes (hiring or enrolling) and no (not hiring or not enrolling). The utility of the "yes" alternative is defined as the sum of the utility associated to the levels of each skill in the profile. The utility of the "no" alternative is fixed to zero. This means that the utilities of skill levels are estimated with respect to the decision of not hiring any candidate or not enrolling in any program. In other words, a positive parameter can be

interpreted as a skill being desirable, while a negative coefficient represents something that fails to meet a minimal standard.

Mixed logit models (McFadden & Train, 2000) were used to analyse the data and obtain the results presented in this document. All models were estimated using the Apollo package (Hess & Palma, 2019) in the R programming environment (R Core Team, 2021).

While the sign of preference parameters β_k in the logit model indicate whether it's associated attribute x_k is desirable ($\beta>0$), undesirable ($\beta<0$) or indifferent ($\beta=0$) for the choice maker, judging the magnitude of the preference is more difficult. This is because β_k is the effect of x_k on the utility of the choice maker, but utility does not have any meaningful unit. Instead, to measure the magnitude of the impact it is better to use x_k's Average Marginal Effect (AME) on the probability of choice. The AME measures the average change in the probability of choosing an alternative due to a change in one attribute across the whole sample, while keeping all other attributes (explanatory variables) at their observed values. Eqn. (3) and (4) present their formulae for dichotomous and continuous variables, respectively.

$$AME_k = \frac{1}{N}\sum_n P_{ni}(x_{nk} = 1) - P_{ni}(x_{nk} = 0) \tag{3}$$

$$AME_k = \frac{1}{N}\sum_n P_{ni}(x_{nk}) - P_{ni}(x_{nk} + 1) \tag{4}$$

3.4. Study Sites, Data Collection, and Sampling

This study involves two stated-choice primary surveys: one for students of HEIs and another for their potential employers. The study site for the student surveys is Islamabad. Four universities (two public and two private) have been selected from the Islamabad Capital Territory. These include Quaid-e-Azam University (QAU), the International Islamic University (IIUI), the National University of Sciences and Technology (NUST), and the National University of Modern Languages (NUML). We centre our data collection in Islamabad because it has some of the main HEIs of the country, hosting students from all over Pakistan.

Since the student surveys are being administered in Islamabad, the major proportion of the employer sample will also be from this city. Additionally, Islamabad is home to various government organisations, NGOs, private companies, educational institutions, and informal businesses. Nonetheless, when it comes to employers, we strive to achieve as wide a representation from the industry as possible. To ensure this, we survey employers outside of Islamabad, including those from Lahore and Karachi. These two cities have a greater concentration of diverse employers, including government departments, non-government organisations, private companies, and businesses.

Both surveys include an experimental design and a questionnaire. The experimental design presents respondents with repeated choices, as shown in Figure 1. These choice scenarios are determined using an efficient experimental design (Rose & Bliemer, 2009). However, the questionnaire is used to gather respondents' socio-demographic characteristics and other relevant information about HE

and employment perceptions and practices, and the details about the potential employers, as they are included in a primary survey questionnaire.

The qualitative part of the study, i.e., interviews and focus groups, was mostly based on purposive and convenience sampling through the researchers' network. However, we use random and purposive sampling for the quantitative part of the study. For example, we select a random sample for student surveys from the selected universities, using existing enrolment data in the economic and business programs of the selected universities. Whereas, for the employer surveys, we use the purposive sample method, engaging with the Islamabad, Lahore, and Karachi Chamber of Commerce and Industry, publicly available employer registers, and different informal networks.

We aimed to collect responses from 1,000 different students and 200 different employers. Student surveys use an online and self-administered method, while we conduct employer surveys with the help of trained enumerators. We make special efforts in collecting responses from a varied pool of participants. This means that students from different universities, sexes, and backgrounds are recruited. Similarly, the employer sample includes those from different sectors, industries, and sizes. In the case of employers, we sometimes interviewed more than one respondent from a single employer organisation, as large organisations usually have more than one person involved in recruitment decisions. Survey instruments, i.e., experimental design and questionnaires, were piloted twice before the final surveys.

3.5. Sample Description

The main data collection effort took place between September 2025 and January 2026. In total, 1390 students and 339 employers were surveyed. For the purpose of analysis, we only kept responses from participants who completed all six choice scenarios, leading to a sample of 847 students and 188 employers. While these respondents completed all choice scenarios, they may still have missing information regarding their socio-demographics and other characteristics.

Table 2 presents the main characteristics of respondents, both employers (left) and students (right). Almost half of the employers come from the private sector, with development, policy and research, and banking being the most common industry areas. Most employers are medium-sized (40%), i.e. they have between 26 and 250 employees, with the rest of the sample spreading roughly evenly among small and large employers. Most employer respondents (87%) belong to the middle to high (executive-level) management, as they make hiring decisions. At least 77% of surveyed employers made at least one hiring decision within the last two years. The average starter salary offered by the surveyed employers was 60,568 PKR per month.

Table 2: Sample Description

Employers				Students			
Category	Variable	N	%	Category	Variable	N	%
Sector	Private	86	46%	Age	19 or younger	45	5%
	Government	59	31%		20 to 21	289	34%
	International org.	0	0%		22 to 24	406	48%
	NGO	10	5%		25 or older	76	9%
	Other	33	18%		Unknown	31	4%
Industry	Banking and finance	23	12%	Sex	Female	424	50%
	Buying and selling	15	8%		Male	391	46%
	Development	34	18%		Other / unknown	32	4%
	Policy and research	32	17%	Household	33k or less	53	6%
	Regulations	11	6%	income	33k - 66k	112	13%
	Utilities	7	4%	(PKR per	66k - 100k	196	23%
	Other	66	35%	month)	100k - 150k	99	12%
Size	Small (up to 25)	49	26%		150k - 200k	106	13%
(number of	Medium (26 to 250)	74	39%		200k - 400k	102	12%
employees)	Large (more than 250)	52	28%		More than 400k	103	12%
	Unknown	13	7%		Unknown	76	9%
Position of	Middle management	56	30%	Secondary	Private	528	62%
respondent	Senior management	65	35%	school	Government school	241	28%
	Executive	42	22%		Other	78	9%
	Other	25	13%	Program	Graduate	134	16%
Number of hires in last two years	1	10	5%		Undergraduate	687	81%
	2	34	18%		Other	26	3%
	3	31	16%	Discipline	Business/management	398	47%
	4	16	9%		Economics	235	28%
	5	15	8%		Unreported	214	25%
	>5	38	20%	University	IIUI	126	15%
	Unknown	44	23%		QAU	194	23%
Average salary	30000	18	10%		NUST	238	28%
	35000	15	8%		NUML	246	29%
	45000	22	12%		Unknown	43	5%
	55000	40	21%	Fee	33k or less	21	2%
	65000	26	14%	(PKR per	33k - 66k	310	37%
	75000	24	13%	semester)	66k - 100k	179	21%
	85000	9	5%		100k - 200k	99	12%
	95000	10	5%		200k - 300k	163	19%
	100000	12	6%		More than 300k	16	2%
	Unknown	12	6%		Unreported	59	7%
N		188		N		847	

Source: Authors' compilations based on Survey data.

Concerning students, 87% of them are under 25 years of age, with the average age being 22.25 years old in the student sample. This is consistent with 81% of the sample being undergraduates. Half of the sample is female. The average monthly household income for all students is 290,461 PKR. Yet, more than half of our student sample (62%) come from private secondary schools, with this subsample having a higher average household income than the rest (348,925 PKR/month). Almost half of the sample is registered in Business or management programs, while 28% is registered in Economics programs. All respondents come from four universities (in decreasing order of

participants): NUML, NUST, QAU, and IIUI. The program fees per semester show great variability, with a range of 10,700 to 930,000, and an average of 124,498 PKR/semester.

RESULTS

This section presents the results of choice models estimated using data from two stated choice surveys administered to investigate employer and student preferences for marketable knowledge and skills provided by higher education programmes in business and economics disciplines in Pakistan. We estimated data using a mixed logit model with random coefficients, allowing for preference heterogeneity. We based our search for the best model specification on all coefficient signs (i.e. effect directionality) and significance, while maximising the model fit. We first present the employer preferences for marketable knowledge and skills provided by higher education programmes in business and economics programmes.

4.1. Employers' Preferences

Table 3 presents the employer preferences for different levels of knowledge and skills of fresh graduates of economics and management disciplines. The estimates include both coefficients, their standard deviations, and average marginal effects (AMEs) for each level of employable knowledge and skills. The coefficients indicate sign and significance, standard deviations demonstrate preference heterogeneity, while AMEs show the potential contribution of each level of skill in terms of probability of selection. For readers' ease, we also include two figures (

Figure 2 and

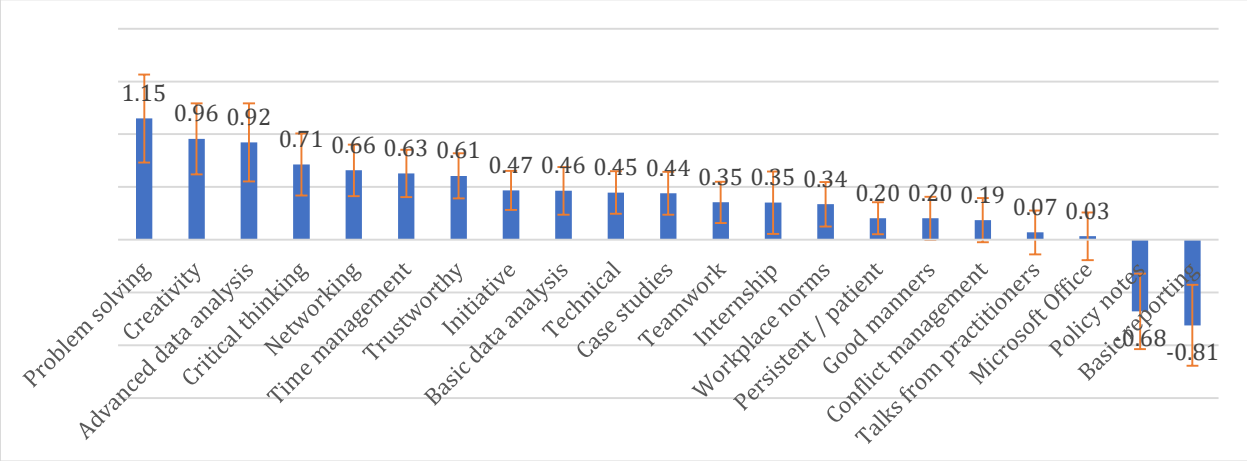
Figure 3) showing the estimated coefficients and AMEs visually. Model estimates returned expected signs and significance of parameters, while preference heterogeneity seems significant for most of them.

Overall, findings revealed that employers place a higher value on advanced analytical skills, such as data-driven, creativity, and analytic capabilities, among fresh graduates. For example, problem-solving is the most sought-after skill by employers among all the skills presented to them in the survey. AMEs show that a fresh graduate with problem-solving skills has about 11% greater chances of being employed. Similarly, creativity is a highly valued skill by employers with a significant potential impact on getting hired. Keeping other things constant, a candidate with creative thinking skills has roughly 10.8% more odds of employment.

After this, advanced data analysis skills are sought among fresh graduates of business and economics programmes. AMEs indicates that a graduate with advanced data analysis skills has almost 6.4% chances of getting recruited. These four skills make a good combination for a package of advanced analytical competencies that are highly appreciated in the job market, allowing a candidate to secure employment. This indicates that universities should focus on imparting these skills, and students should seek to develop their competencies to meet these expectations.

This is followed by soft and office management skills that employers seek among fresh graduates. For example, employers expect time management skills among fresh graduates, demonstrating a value for candidates' ability to be punctual and deliver tasks on time. In percentage terms, time management can enhance the chances of employment by 5%. Similarly, an employee's ability to take initiative and teamwork is prized, improving the odds of selection by 4% and 3%, respectively.

Figure 2: Employers' Preferences for Candidates' Skills



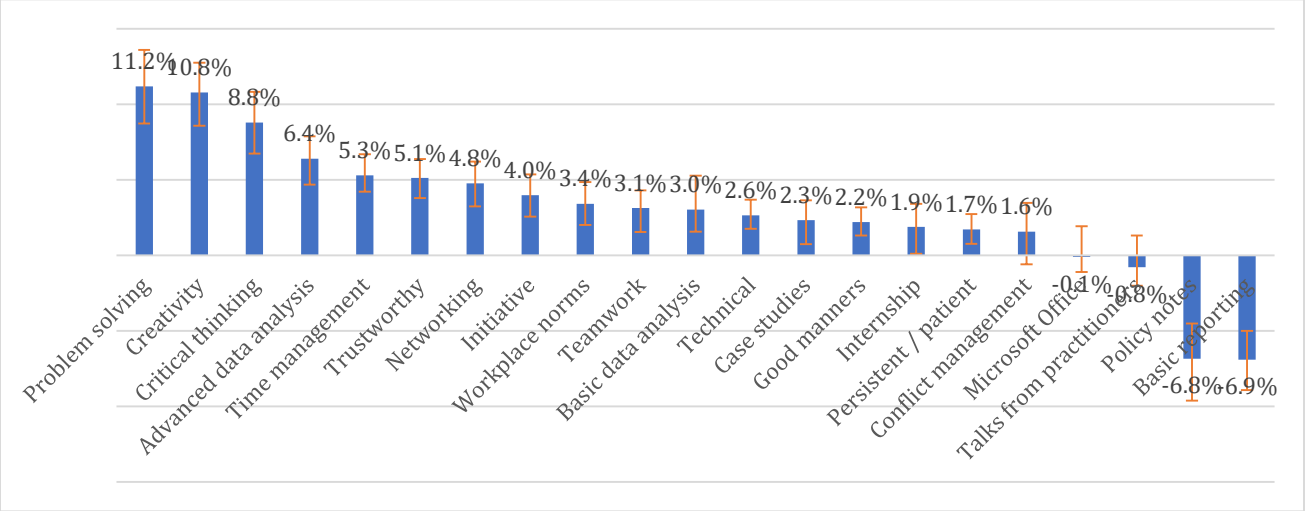
Source: Authors' compilations based on Survey data.

However, employers also expressed their preferences for the social and emotional intelligence of fresh graduates, highlighting the importance of personality traits and self-awareness in the modern job market. For example, trustworthiness as a personal trait or quality has been appreciated by employers, contributing to the odds of getting selected by 5%. The ability to network and build relationships also drives the chances of employment of fresh graduates with the same marginal effect. A similar parameter of social and emotional intelligence of fresh graduates is the ability to understand and embrace workplace norms. Keeping other things constant, this skill contributes to the chances of employment by roughly 3.4%.

Likewise, the surveyed employers' preferences revealed that good manners and etiquette, conflict management, and patience and persistence are also key attributes that positively affect the chances of employment of fresh graduates, although their marginal contributions to the hiring decision are relatively small. We observed that employers do not place significant value on basic data analysis skills among fresh graduates, while simple MS-Office skills are almost of no value to employers. This is because tasks that require basic MS-Office work and/or data handling could be assigned to clerical staff and are often considered rudimentary.

Surprisingly, employers put low value on attributes related to the practical experience of fresh graduates. For example, AMEs indicate that the case study-based teaching, signifying an orientation to practical problems, contributes by roughly 2.3% in the recruitment of fresh graduates, while internship experience of fresh graduates has only 1.9% contribution to their chances of getting selected for a position. This points out the effectiveness and applied value of doing an internship and/or embedding practical knowledge and skills in higher education. This finding has direct implications for higher education institutions and students to ensure the integrity and usefulness of applied learning and practical experience. Community service in Western higher education is less formal than doing an internship in Pakistan, yet it commands greater veracity in the job market; employers encourage candidates to highlight community and volunteering in their job applications and cover letters.

Figure 3: Average Marginal Effects of Skills on the Probability of being Hired



Source: Authors' compilations based on Survey data.

Lastly, findings indicate that employers tend to value analytical and soft skills of fresh graduates more than their report-writing skills. This is possibly because the nature of tasks assigned to fresh graduates is more related to data and information collection, analysis, and public dealing than report writing, although report writing could be critical for economics graduates. In addition, this could also be due to the advent of artificial intelligence and the increasing use of chatbots that have made report writing, editing, and formatting tasks relatively easy.

We have also incorporated some of the relevant variables as interaction terms in the model from the questionnaire (as the baseline model included only attributes of marketable knowledge and skills presented in the attribute table) to model their impact on employers' choices. The use of interaction terms enabled us to discover additional insights into employers' preferences for marketable skills of fresh graduates. For example, findings revealed that employers involved in research and policy development value critical thinking and creativity more than others, which is an expected finding as research and policy organisations require advanced analytical competencies among fresh graduates.

Interestingly, the interaction of workplace norms and government sector employment is significant, indicating that employers from the government sector appreciate the understanding of workplace norms as a skill. Similarly, government employers seem to be keen about fresh graduates' proficiency in manners and etiquette. Seemingly, this is expected, as government organisations usually have set patterns of work and a strong organisational culture. However, in the Pakistani context, this may also mean a less dynamic and more formal work environment that values conformity more than creativity and innovation. While overall results show relatively less value of fresh graduates' internship experience, government employers place a value on this attribute.

Table 3 - Coefficient Estimates for Employers

		Estimates				AME
Skills	**Levels**	**Mean**	**t-ratio**	**Std. dev.**	**t-ratio**	
Digital	Microsoft Office	0.0336	0.29	-0.7164	-4.48	0%
	x large employer	0.3951	1.62			
	Basic data analysis	0.4647	4.03	-0.9588	-4.76	3%
	Advanced data analysis	0.9234	4.9	-1.051	-4.45	6%
Writing	Policy notes	-0.6772	-3.71	0.5999	3.31	-7%
	Basic reporting	-0.8103	-4.13	0	(fixed)	-7%
	x large employer	0.3479	2.15			
	Technical	0.448	4.37	-0.5613	-3.8	3%
Analytical	Critical thinking	0.7132	4.76	0	(fixed)	9%
	x Area: Policy & Research	0.6256	2.7			
	Problem solving	1.149	5.41	0.6786	3.98	11%
	Creativity	0.9574	5.58	0.4631	2.86	11%
	x Area: Policy & Research	0.5037	1.95			
Self-admin	Time management	0.6284	5.49	0.5762	3.27	5%
	Teamwork	0.3549	3.55	0.3678	2.29	3%
	Initiative	0.4684	4.97	0.5827	3.72	4%
Social	Conflict management	0.1855	1.74	0	(fixed)	2%
	Networking	0.6579	5.3	0.8437	4.39	5%
	Workplace norms	0.3367	3.14	0.2721	0.75	3%
	x Sector: Government	0.243	1.24			
Attitude	Good manners	0.203	1.93	0.203	1.93	2%
	x Sector: Government	0.4521	2.53			
	x Area: Policy & Research	-0.4545	-2.17			
	Persistent / patient	0.2037	2.62	0	(fixed)	2%
	Trustworthy	0.6059	5.55	0.4065	2.33	5%
Practical experience	Case studies	0.4401	4.23	1.0038	4.62	2%
	Talks from practitioners	0.0696	0.66	-0.947	-4.97	-1%
	Internship	0.3521	2.34	1.199	5.05	2%
	x Sector: Government	0.4318	1.63			
	60,000 PKR/month	-0.0061	-1.95	0.01	3.96	(base)

		Estimates				AME
Skills	**Levels**	**Mean**	**t-ratio**	**Std. dev.**	**t-ratio**	
Salary (small employers)	80,000 PKR/month	-0.0019	-1.08			2%
	100,000 PKR/month	-0.0024	-1.62			0%
Salary (medium employers)	60,000 PKR/month	-0.0055	-1.69			(base)
	80,000 PKR/month	0.0014	0.56	-0.0129	-3.79	3%
	100,000 PKR/month	-0.0004	-0.17			1%
Salary (large employers)	60,000 PKR/month	0	0.01			(base)
	80,000 PKR/month	0.0054	2.1	-0.0112	-3.91	2%
	100,000 PKR/month	0.0079	3.52			4%
Scale	Best	1.8695	4.55	0	(fixed)	
	Worst	-1.6603	-4.63	0	(fixed)	
Fit	Loglikelihood	Best	-1933.04			
		Worst	-1945.59			
		Choice	-401.79			
		Total	-4321.37			
	Rho squared	vs equal shares		0.2104		
		vs obs. shares		0.1997		
	Adjusted Rho squared	vs equal shares		0.0995		
		vs obs. shares		0.0903		
	Number of parameters			59		
	Number of respondents			188		
	Number of observations			1128		

Source: Authors' compilations based on Survey data.

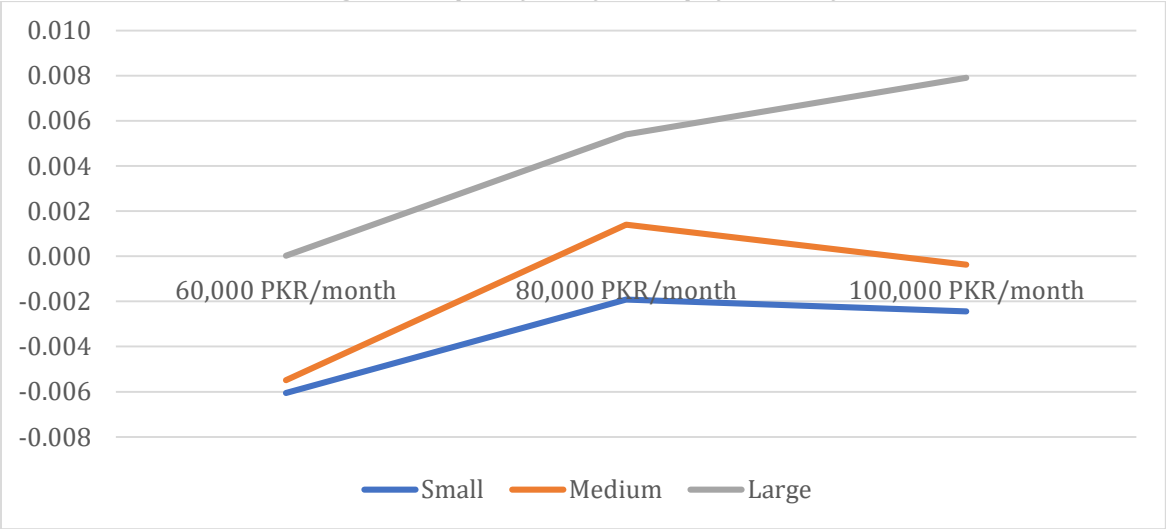
Results show that the interaction terms of basic MS-Office and basic report writing skills with the large size of the employer[3] are significant, indicating that large employers place relatively more value on basic MS-Office and basic report writing skills. Most plausibly, this is because large organisations have less specialised responsibilities for fresh graduates. For example, the banking sector is a large employer of economics and management graduates in Islamabad who recruit fresh graduates in sales and customer service, requiring basic writing and computer skills.

[3] Small employers have up to 25 employees, medium employers have 25 to 250 employees, while large employers have more than 250.

Interestingly, the salary attribute demonstrates unique preference patterns for small, medium, and large employers. We show the preferences of employers for different levels of salary in Figure 4. The vertical axis shows the coefficient estimate values from the model, also presented in

Table 3. We observe that small companies are more sensitive to salary than medium-sized companies, as their coefficients are more negative (hence they prefer them less). Similarly, medium-sized companies are relatively more responsive to salary than large-sized companies. Contrary to classical economic theory, we observe that -on average- employers are less responsive to the salary demanded by fresh graduates but are more concerned about their level of skill. This could be because of employers' greater focus on candidates' skills than on their salary, salary range (Table 1) was lower than what employers would expect, and greater attention to skills attributes in choice sets.

Figure 4: Impact of Salary on Employers' Utility



Source: Authors' compilations based on Survey data.

The model includes random heterogeneity, assuming that most coefficients follow a normal distribution. Several variables demonstrated substantial preference heterogeneity. As shown in

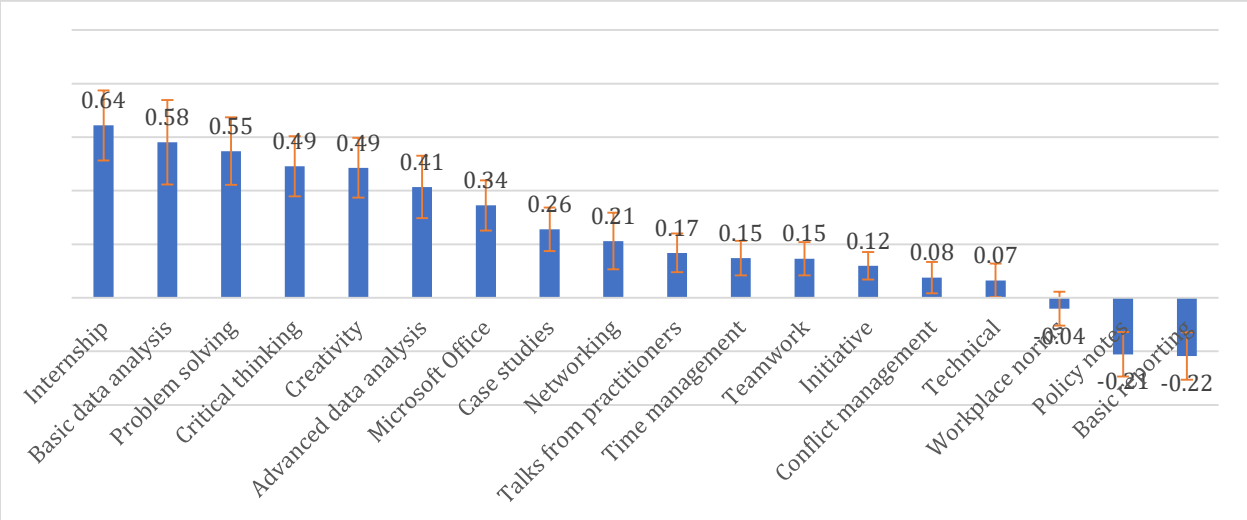
Table 3, the coefficients signifying practical experience have the highest level of variability, followed by digital skills. This reflects that different employers have different opinions about the relevance of these skills. Networking and relationship building is another skill whose valuation has a high level of variability. This is expected as developing a strong network of connections can be very relevant in some industries, while not so much in others.

4.2. Students' Preferences

This study also investigated students' preferences for employable knowledge and skills, surveying final-semester undergraduate and postgraduate students of business and economics programmes at four Pakistani universities in Islamabad.

Table 4 presents the model estimates, including coefficients and AMEs for parameters indicating employable knowledge and skills. Students' data is also estimated using a mixed logit model with random coefficients. Overall, student preferences are different from employer preferences for employable knowledge and skills. This highlights a gap in what is valued in the job market in terms of skills and what students believe is important. For example, an internship during studies is moderately valued by employers, but students have the highest appreciation for this attribute of an academic programme. AMEs indicate that students' chances to enrol in a course/programme increase by roughly 9.2% if the programme includes an internship.

Figure 5: Students' Preferences for Skills



Source: Authors' compilations based on Survey data.

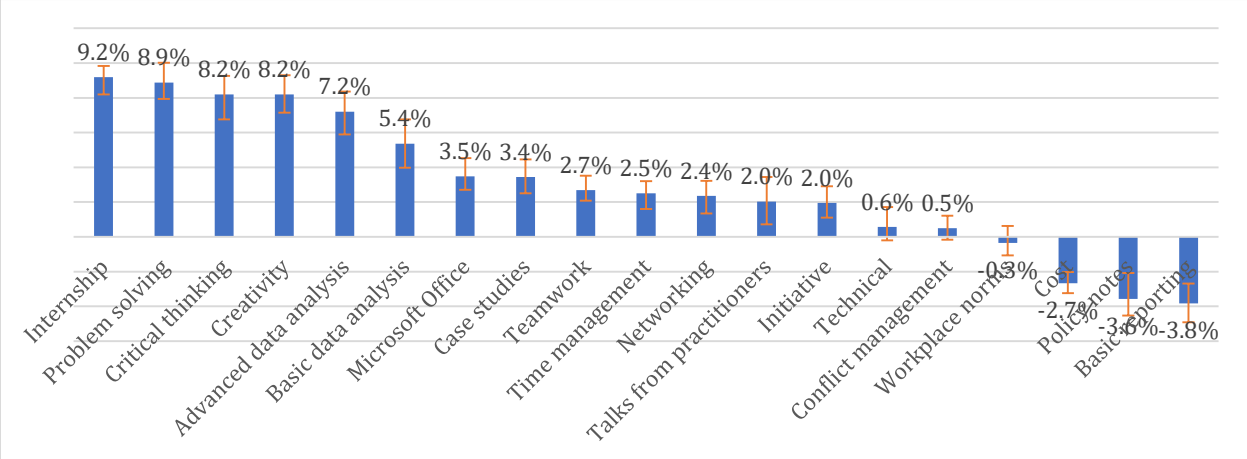
Similarly, basic data analysis as an attribute of a programme is also highly valued by the students, although the marginal impact is relatively low (5.4%). While students may want to gain basic skills and then expand on those skills, employers expect proficiency upon entry into the job market. Encouragingly, problem-solving as an attribute of a study programme is relatively highly desired by students, but it is still lower than employers' valuation of this skill. Marginal effects show that a programme that prepares students for problem-solving has almost 8.9% greater chances of getting enrolled by students. This clearly underscores the importance of delivering this skill by HEIs, enabling them to position themselves accordingly.

Creative thinking and creativity are also highly appreciated features of a study programme by students. In terms of probability, each of these two skills (programme attributes) can potentially increase enrolment by 8%. The valuation of these two skills by students has relatively better alignment with employers' preferences for these two skills. Likewise, advanced data analysis is also considered an important feature of academic training by students, increasing the chances of enrolment in a programme by students that embeds advanced data analysis by almost 7%.

In terms of soft and office skills and professionalism, students preferred training in teamwork, time management, networking, and initiative skills. Embedding these features into academic programmes can improve the chances of students' enrolment by 2-3%. Students also seem to value talks from industry practitioners as part of their studies programmes, although this has no significant value to

employers when it comes to their preferences for employability skills. Concerningly, students did not place significant value on writing skills as part of their academic training, which should be a priority. For example, employers' valuation of technical writing skills is higher than students' valuation.

Figure 6: Average Marginal Effects of Skills on the Probability of being Chosen



Source: Authors' compilations based on Survey data.

Again, we have included a few interaction terms in the model to simulate the impact of some of the variables, and the findings yielded interesting insights. In terms of analytical skills, we observed that overall female students and management students prefer basic data analysis skills, while economics students, in general, value advanced data analysis. Similarly, NUST students do not value an academic programme that trains only in MS Office. Furthermore, problem-solving as a feature of academic training is more appreciated by postgraduate students than undergraduate students, while NUST students have a greater appreciation for creativity.

Regarding office skills and professionalism, postgraduate students value time management and teamwork as part of their academic training more than undergraduate students. As for social and emotional intelligence, students from the economics discipline, those who studied in private schools for their secondary, and those from NUST do not consider networking and relationship-building skills to be developed in their academic training. Similarly, students from IIUI do not value conflict management skills as a future of their study programmes. However, postgraduate students appreciate their skill development in navigating the workplace norms.

Table 4: Students' Preferences for Marketable Employment Skills

		Estimates				AME
Skills	**Levels**	**Mean**	**t-ratio**	**Std. dev.**	**t-ratio**	
Digital	Microsoft Office	0.3450	7.18	-0.6094	-8.42	3.5%
	x NUST	-0.3334	-3.94	-	-	
	Basic data analysis	0.5806	7.23	0.7057	8.94	5.4%
	x Female	-0.1463	-1.86	-	-	
	x Business & Management	-0.2552	-3.22	-	-	
	Advanced data analysis	0.4139	6.96	-0.8244	-9.37	7.2%
	x Economics	0.4580	4.08	-	-	
Writing	Policy notes	-0.2109	-4.98	0.4649	6.54	-3.6%
	Basic reporting	-0.2173	-4.79	-0.4430	-6.42	-3.8%
	Technical	0.0652	2.03	0.4121	6.30	0.6%
Analytical	Critical thinking	0.4915	8.57	-0.3225	-4.39	8.2%
	Problem solving	0.5478	8.53	0.4184	7.06	8.9%
	x post-graduate student	0.0989	1.11	-	-	-
	Creativity	0.4855	8.52	-0.4366	-7.10	8.2%
	x NUST	0.0991	1.39	-	-	-
Self-admin	Time management	0.1480	4.49	0.3873	6.41	2.5%
	x post-graduate student	0.2369	2.65	-	-	-
	Teamwork	0.1460	4.64	-0.3107	-4.82	2.7%
	x post-graduate student	0.2229	2.85	-	-	-
	Initiative	0.1197	4.61	0.0611	0.87	2.0%
Social	Conflict management	0.0756	2.52	0.2374	3.85	0.5%
	x IIUI	-0.2365	-3.29	-	-	
	Networking	0.2122	3.93	0.2315	2.76	2.4%
	x Private secondary school	-0.1213	-1.90	-	-	-
	x Economics	-0.1420	-2.36	-	-	-
	x NUST	0.2192	2.94	-	-	-
	Workplace norms	-0.0404	-1.26	0.2275	2.82	-0.3%
	x post-graduate student	0.1759	2.16	-	-	-
Practical experience	Case studies	0.2561	6.20	-0.5816	-7.78	3.4%
	Talks from practitioners	0.1678	4.57	0.5993	8.19	2.0%
	Internship	0.6438	9.61	-0.6621	-8.72	9.2%
Cost	Semester fee	-0.0338	-3.97	0.2968	1.90	-2.68%
Scale	Best	1.8390	8.18	-	-	
	Worst	-2.4840	-7.51	-	-	

		Estimates				AME
Skills	**Levels**	**Mean**	**t-ratio**	**Std. dev.**	**t-ratio**	
Fit	Loglikelihood	Best	-8819.60			
		Worst	-8527.62			
		Choice	-2700.08			
		Total	-20301.92			
	Rho squared	vs equal shares		0.1287		
		vs obs. shares		0.1264		
	Adjusted Rho squared	vs equal shares		0.0652		
		vs obs. shares		0.0633		
	Number of parameters			54		
	Number of respondents			847		
	Number of observations			5082		

Source: Authors' compilations based on Survey data.

These are really interesting findings from interaction terms that disentangle the effects, revealing the choices of different groups of students. These findings can help academics and HEIs improve their academic programmes, aligning them to students' and employers' preferences in imparting marketable knowledge and developing students' skills to enable them to survive the dynamics of the modern job market, improving their chances of getting opportunities for their livelihood.

CONCLUSION

This study investigated employer and student preferences for marketable knowledge and skills provided by higher education programmes in business and economics disciplines in Pakistan. The analysis is carried out with employers and students in Islamabad using stated choice surveys and the choice modelling approach, which entailed two experimentally designed surveys. The findings present employers' preferences for different skills among fresh graduates of business and economics disciplines, as well as the choices of students from business and economics disciplines for marketable knowledge and skills that they seek in higher education programmes. Overall, the results demonstrate interesting insights and nuances, grounded in robust empirical evidence, about the preferences for different skill sets in the job market and their alignment or lack thereof with students' expectations and preferences. The findings revealed clear trends about employers' preferences for skills of fresh graduates, showing a notable skills hierarchy, although we noted significant preference heterogeneity across sectors, organisation sizes, disciplines, and student groups.

Model estimates show that advanced analytical competencies such as problem solving, creative and critical thinking, and advanced data analysis are valued the most, emerging as the strong predictors of employability of business and economics graduates. The skills (attributes) show strong effects on the probability of hiring with substantially larger marginal effects, signifying their importance for employers, and thus their potential role in recruitment decisions. This means that employers in the Pakistani job market seek business and economics graduates who are proficient in the analysis of complex information, creative and critical thinking, and independent problem-solving.

The results also show that basic digital skills, such as MS Office and elementary data analysis, are not appreciated so much by employers, indicating their low value for employability. Similarly, employers seem to place relatively less value on work experience attained through internships or applied learning through case studies, etc., highlighting their limited role in hiring decisions than commonly assumed. Surprisingly, employers did not put significant value on writing skills, except for large employers. However, employers valued soft skills, social intelligence, and professional attitudes of fresh graduates. For example, employers preferred candidates who are skilled in time management and teamwork, in addition to having the ability to take initiative and develop professional relationships.

Interestingly, employers highly valued trustworthiness as a personal trait, while familiarity with workplace norms is also appreciated. The consistent significance of these skills, along with more advanced technical skills, indicates that employability is shaped by a balanced portfolio of technical, social, and behavioural competencies that is a mix of expertise and a professional attitude. Expectedly, results indicate that government employers place greater emphasis on workplace norms and employees' personal conduct, indicating an appreciation for conformity. Large employers value basic writing and office skills more than smaller firms, and research- and policy-oriented organisations demand stronger analytical and creative capacities. Nevertheless, these results have significant implications for students in preparing themselves for employment, and higher education institutions in designing their educational programmes.

The results from the student survey revealed a different trend, leaning more towards basic skills. This indicates a divergence in choices of students and employers for employable knowledge and skills, and thus a gap in students' awareness of the skills appreciated in the job market. However, it is encouraging to see that students still place significant value on problem-solving, creativity, and advanced data analysis – skills which are prized in the job market. But students' and HEIs' expectations of the role of internships in securing employment by fresh graduates are overvalued. This does not necessarily mean that internships are useless, as interaction terms indicate that they were appreciated by government employers; maybe there is a need to improve the processes and usefulness to get them recognised.

Concerningly, students placed low value on their writing skills, indicating that they do not deem them necessary for their employment. Notwithstanding the advent of artificial intelligence, writing skills are vital for professional communication and long-term career progression. While the overall employers seemed less keen about fresh graduates' writing skills, the results of interaction terms demonstrated their appreciation by large employers. The interaction results further show variation in student preferences. For example, management students and female students tend to favour basic data analysis, whereas economics students place more value on advanced data analysis skills. Similarly, postgraduate students seem to prefer problem-solving, time management, and teamwork skills more than undergraduate students.

This study offers important insights for higher education institutions, policymakers, and students to revise and recalibrate academic programmes in business and economics disciplines, focusing more on advanced analytical and problem-solving capabilities, while arranging for social and professional competencies, and ensuring that practical experience and internships signify skills and practical experience. The findings also underscore the importance of HEIs' deeper engagement with industry to redesign the courses as well as to improve the credibility and effectiveness of applied learning offered through these courses. Whereas students need to look beyond credential accumulation and focus more on the development of advanced technical skills and professional competencies, considering the requirements of the job market. Nevertheless, addressing a disconnect between student preferences and employer demands for skills and (mis)alignment with academic programmes is essential for improving graduate outcomes and ensuring that higher education remains relevant and responsive to the evolving dynamics of Pakistan's labour market.

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APPENDIX: SUMMARY OF CONSULTATIONS FOR SURVEY DESIGN: FOCUS GROUPS

The graduates' employability study in Islamabad is in process to identify key skills among Economics and Business studies graduates with a prospect of job placements. The other side of this study tends to investigate employers' expectations attached to fresh graduates of Economics and Business studies. In light of this exercise trial, FGDs and Expert Interviews were organised during the last month of May 2025. Therefore, we formulated a list of questions for holding FGDs with selected Universities (QAU, NUML, IIUI, NUST) terminal year undergraduates and postgraduate students. A list of questions was also formulated to hold expert interviews with employers and policy experts. The summary report is prepared to provide some insights derived from FGDs and Expert Interviews.

The first part would be discussing a list of insights that have been identified by organising FGDs with the above-mentioned university graduates. There are some insights revealed by students when they were responding to questions about making a decision to study Economics and Business Studies. These are as follows;

1. Family influence and social peer pressure are referred to as the main factors in studying Economics and Business studies.
2. Students shared that they never wanted to study it but forced to study Economics and Business studies due to low merit/grades secured in their intermediate certificates.
3. Some students shared that middle-class families consider it exposure to diverse cultures, resulting in an opportunity to attain social status and standing.

The second list of insights was revealed by students in response to a question about their expectations for Economics and Business studies programs. These are as follows;

1. Students said that they were expecting that these programs would enable them to get a deep understanding and knowledge of the Economy; however, they came across visible gaps in course design and market needs. They discussed about rapid transformations demand newly emerging tech skills must be included that could enhance their marketability.
2. Students pointed out that the focus is on securing jobs in very limited sectors with little emphasis on turning fresh graduates into successful entrepreneurs. Therefore, they think that their expectations are mostly unfulfilled.
3. Students pointed out that universities are weak in building liaisons with potential employers. They hinted at insufficient opportunities for internships, making it a further grim prospect to gain practical knowledge.
4. Some students shared that opportunities are there, but salaries are not commensurate with the living costs of urban centers.
5. Some pointed out that emerging marketable tech skills are not receiving due attention from university administrations. (Project Feasibility studies, Financial Analysis, Coding Skills)
6. Some hinted that most graduates are less competitive than graduates of NUST and LUMS.

The third list of insights carries opinions in response to factors that impede their expected skill development, thereby chances of employment. These are as follows;

1. Students shared their opinions in response to hurdles in the way of finding jobs, referring to the rapidly changing economy is demanding new skills that university courses are not delivering, thus widening the skill gap and forcing many to be jobless.
2. Female students hinted at gender barriers as one of the main factors impeding their way to find jobs.
3. Some females who have been working somewhere pointed out that the flow of information and knowledge is under the control of fellow male workers due to their managerial positions. Thereby, it restricts job growth and new opportunities.

The last question is about their level of satisfaction with the program and expected employability. The respondents were given a scale (0-10) to share their level of satisfaction. They shared their scale of satisfaction, ranging from 5 to 7). It indicated that they are partly satisfied with their degree programs.